142 FERC ¶ 61,022
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Philip D. Moeller, John R. Norris,
Cheryl A. LaFleur, and Tony T. Clark.

Entergy Services, Inc. Docket No. ER10-2001-001

OPINION NO. 523

ORDER AFFIRMING INITIAL DECISION

(Issued January 8, 2013)

Description Paragraph Numbers

1. This case is before the Commission on exceptions to an Initial Decision[1] issued on September 23, 2011. In this order, the Commission affirms the determinations of the Presiding Administrative Law Judge (Presiding Judge) relating to the issues set for hearing involving the justness and reasonableness of Entergy Services, Inc.'s (Entergy) proposed production depreciation rates (Depreciation Rates) for Entergy Arkansas, Inc. (Entergy Arkansas).[2]

I. Background and Procedural History

A. Introduction to the Entergy System

2. Entergy Corporation is a public utility holding company consisting of six Operating Companies which provide generation, transmission, and distribution services to wholesale requirement and retail loads in the states of Louisiana, Mississippi, Arkansas, and Texas.[3] While each Operating Company owns or has under contract its own generation, transmission, and distribution assets, the Entergy system is planned and operated as a single integrated electric system, pursuant to the terms of the Entergy System Agreement (System Agreement).[4] Entergy, a subsidiary of Entergy Corporation, provides general executive, management, advisory, administrative, accounting, legal, regulatory, and engineering services to the Operating Companies.

3. For more than fifty years, Entergy's system has operated under some form of the System Agreement. The System Agreement is the contract among the Operating Companies and Entergy, which provides for the joint planning, construction, and operation and maintenance of the generation, transmission, and other facilities of the

[1] *Entergy Servs., Inc.*, 136 FERC ¶ 63,015 (2011) (Initial Decision).

[2] *Entergy Servs., Inc.*, 132 FERC ¶ 61,252 (2010) (Hearing Order).

[3] The six Operating Companies are: Entergy Arkansas; Entergy Louisiana, L.L.C. (Entergy Louisiana); Entergy Mississippi, Inc.; Entergy New Orleans, Inc.; Entergy Texas, Inc.; and Entergy Gulf States Louisiana, LLC.

[4] The System Agreement was originally approved by the Commission in 1985. *Middle South Energy, Inc.*, 31 FERC ¶ 61,305, *order on reh'g*, 32 FERC ¶ 61,425 (1985). The System Agreement at issue here was accepted by delegated letter order issued January 12, 2011 in Docket No. ER11-2114-000, *et al.*

Operating Companies and for the sharing of costs and the benefits thereof.[5] The System Agreement is a Commission-approved tariff that provides for the sharing of the cost of reserve capacity on Entergy's system.[6] Further, it provides the terms and conditions governing the allocation of energy among the Operating Companies and how the allocated energy is to be priced for System Agreement purposes. The fundamental principle of the System Agreement is that all of the Operating Companies' resources are directed by a system dispatcher to meet the aggregated needs of the Operating Companies.[7]

4. There are seven service schedules contained in the System Agreement that provide formulas for sharing costs and benefits; however, only the production depreciation rates for Service Schedules MSS-1, MSS-3 and MSS-4 remain at issue in this proceeding. The following is a brief overview of Service Schedules MSS-1, MSS-4, and MSS-3, generally describing how the depreciation rates are incorporated into the Service Schedules and how the depreciation rates can affect the production cost.

1. Service Schedule MSS-1

5. The purpose of Service Schedule MSS-1 (Reserve Equalization) is to "provide the basis for equalizing the capability and ownership cost incidental to such capability among the [Operating] Companies in such a manner that the capability and reserves of each [Operating] Company after equalization shall be equal to its Capability Responsibility."[8]

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[5] *Louisiana Pub. Serv. Comm'n v. Entergy Servs., Inc.*, Opinion No. 480, 111 FERC ¶ 61,311, *order on reh'g*, Opinion No. 480-A, 113 FERC ¶ 61,282 (2005), *order on compliance*, 117 FERC ¶ 61,203 (2006) (November 2006 Compliance Order), *order on reh'g and compliance*, 119 FERC ¶ 61,095 (2007) (April 2007 Compliance Order), *aff'd in part and remanded in part, Louisiana Pub. Serv. Comm'n v. FERC*, 522 F.3d 378 (D.C. Cir. 2008), *order on remand*, 137 FERC ¶ 61,047 (2011).

[6] Opinion No. 480, 111 FERC ¶ 61,311 at PP 6-7.

[7] *Id.* P 6.

[8] Service Schedule MSS-1 § 10.01. "'Capability Responsibility' of a Company shall be the System Capability multiplied by the Responsibility Ratio for that Company." System Agreement, Article II, Definitions § 2.19. "'Responsibility Ratio' of a Company shall be the ratio obtained by dividing the load responsibility of that company by the System Load Responsibility." System Agreement, Article II, Definitions § 2.18.

6. As described in section 10.03 of Service Schedule MSS-1, if an Operating Company's capability to serve system load exceeds its Capability Responsibility, then that excess generation from Intermediate Generating Units[9] is allocated among the Operating Companies. An Operating Company (or more than one of the Operating Companies) with excess generation shall receive an equalization payment from the Operating Company (or Companies) that has insufficient generation to serve its loads.

7. The monthly billing charge determined in section 10.06 of Service Schedule MSS-1 is based on a cost of service which includes Intermediate Generating Units production plant and the associated accumulated depreciation in rate base, and additionally, the cost of service includes a depreciation expense component associated with those Intermediate Generating Units. The per kW units in the denominator of the monthly charge are based on the average of all units included as Intermediate Generating Units.

2. Service Schedule MSS-4

8. Section 40.01 of Service Schedule MSS-4 (Unit Power Purchase) states that, "the purpose of Service Schedule MSS-4 is to provide the basis for making a unit power purchase between [Operating] Companies and/or the sale of power purchased by another [Operating] Company."[10] Section 40.03 of Service Schedule MSS-4 provides for a Capability Payment from an Operating Company making the purchase from a Designated Generating Unit[11] based on a cost of service that identifies the investment and expenses in accounts related to that particular Designated Generating Unit, including depreciation expenses and rate base effects of depreciation.

3. Service Schedule MSS-3

9. Service Schedule MSS-3 (Exchange of Electric Energy Among the Companies) includes two rate formulas: (1) the hourly allocation of system energy among the

[9] Generally stated, the Intermediate Generating Units under Service Schedule MSS-1 are those that serve as reserves to the system and are those gas-fired and oil-fired steam production plant units that have an annual average heat rate in the preceding year of at least 10,000 Btu per kilowatt-hour. Service Schedule MSS-1 § 10.05.

[10] Service Schedule MSS-4 § 40.02.

[11] Under Service Schedule MSS-4 § 40.02, a Designated Generating Unit is defined as "any generating unit from which the unit power purchase is made under [s]ection 40.01 that is mutually agreed upon by the purchaser and the seller."

Operating Companies, and (2) a formula to roughly equalize production costs in order to maintain production costs within a specified band among the Operating Companies (bandwidth formula). The proposed Depreciation Rates in this proceeding relate only to the second formula – the bandwidth formula.

10. The bandwidth formula was developed in response to a complaint filed in 2001 challenging the cost allocations among the Operating Companies. In 2005, the Commission issued Opinion No. 480,[12] upholding the Presiding Judge's findings that the Operating Companies' production costs were no longer roughly equal and that the System Agreement was therefore no longer just and reasonable, and specifying an appropriate bandwidth remedy.

11. In Opinion Nos. 480 and 480-A, the Commission established a numerical bandwidth of +/-11 percent of the Entergy system average production costs to maintain the rough equalization of production costs among the Operating Companies. On November 17, 2006, the Commission issued an order accepting Entergy's proposed amendments to Service Schedule MSS-3 to include a formula (based on the methodology in Exhibit Nos. ETR-26 and ETR-28 as directed in Opinion No. 480) to calculate bandwidth payments and achieve rough equalization of production costs.[13]

12. The bandwidth formula described in Service Schedule MSS-3 compares each Operating Company's actual production costs calculated in section 30.12[14] for the twelve months ending on December 31 of the previous year as reported in the FERC Form No. 1 with certain adjustments, to the allocated system average production costs of each Operating Company calculated in section 30.13.[15] If there are deviations (referred to as disparities)[16] of more than the bandwidth of +/- 11 percent, then payments and receipts are determined for each Operating Company as a remedy to maintain rough equalization of production costs.

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[12] Opinion No. 480, 111 FERC ¶ 61,311.

[13] November 2006 Compliance Order, 117 FERC ¶ 61,203.

[14] Service Schedule MSS-3 § 30.12 (Actual Production Cost).

[15] *Id.* § 30.13.

[16] Disparity is defined as the ratio of actual production cost to system average production cost expressed in terms of the divergence from 100 percent.

13. Section 30.12 of Service Schedule MSS-3 includes depreciation and amortization expenses as components of each company's actual production costs. The production rate base component of each company's actual production costs also reflects the corresponding plant in service and accumulated provision for depreciation and amortization used in calculating the return allowance and associated federal and state income taxes in the actual production cost.

B. Entergy's Filing

14. On July 27, 2010, pursuant to section 205 of the Federal Power Act (FPA),[17] Entergy filed proposed depreciation rates, which were approved for retail use by the Arkansas Public Service Commission (Arkansas Commission) on behalf of Energy Arkansas, for use in its wholesale formula rates, including the bandwidth formula. On September 22, 2010, the Commission accepted Entergy's proposed depreciation rates for filing, suspended them for a nominal period, and established a September 27, 2010 effective date, subject to refund.[18] The Commission also established hearing and settlement judge procedures.

15. On November 10, 2010, the Chief Judge issued an order granting a motion to sever, for the purpose of hearing procedures, the proposed production depreciation rates for use in Service Schedules MSS-1, MSS-3, and MSS-4 of the System Agreement from the ongoing settlement proceedings. On March 1, 2011 a partial settlement (Settlement) on the application of Entergy Arkansas' non-production (transmission, distribution, and general) depreciation rates was approved by the Commission.[19]

16. The Settlement provided that all of the non-production (transmission, distribution and general) depreciation rates applicable to the Open Access Transmission Tariff, Entergy Arkansas' wholesale formula rates and Service Schedule MSS-2 of the Entergy System Agreement would be the as-filed depreciation rates contained in Entergy Arkansas' July 27, 2010 filing in this proceeding. The Settlement did not include a resolution of the production depreciation rates applicable to Service Schedules MSS-1, MSS-3, and MSS-4 of the System Agreement. The Settlement states:

> The Parties further agree that the production depreciation rates applicable to Service Schedules MSS-1, MSS-3 and

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[17] 16 U.S.C. § 824d (2006).

[18] Hearing Order, 132 FERC ¶ 61,252.

[19] *Entergy Servs., Inc.*, 134 FERC ¶ 61,152 (2011).

> MSS-4 of the System Agreement are outside the scope of this Settlement and will be the subject of a separate hearing. The outcome of the proceeding in which the production depreciation rates applicable to Service Schedules MSS-1, MSS-3 and MSS-4 of the System Agreement are resolved will have no effect on the depreciation rates applicable to the OATT, [Entergy's] wholesale formula rates and Service Schedule MSS-2 of the System Agreement.[20]

C. Facilities at Issue in this Proceeding

17. This proceeding involves the Entergy Arkansas' Depreciation Rates for use in Service Schedules MSS-1, MSS-3, and MSS-4 as they relate to Entergy Arkansas' production units. A number of different types of production plants are included in the schedules filed for Entergy Arkansas' Depreciation Rates.[21] The Initial Decision addresses escalation and dismantlement issues with respect to the steam production units.[22] The Initial Decision also addresses issues specific to the two units of the Arkansas Nuclear One Facility (Arkansas Nuclear One) – Unit 1 (ANO-1) and Unit 2 (ANO-2) – and the two units of the Ouachita Generating Facility (Ouachita).

18. Arkansas Nuclear One is a two-unit pressurized water reactor nuclear power plant located on Lake Dardanelle in Russellville, Arkansas and is owned by Entergy Arkansas. ANO-1 has a generating capacity of 846 MW and came online May 21, 1974 and is licensed to operate through May 20, 2034. ANO-2 has a generating capacity of 930 MW and came online September 1, 1978 and is licensed to operate through July 18, 2038. ANO-1 and ANO-2 each have two steam generators, with different designs for each

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[20] *Id*. P 2 n.2.

[21] *See* Ex. EAI-8 at 3 for Nuclear Production Plant (Arkansas Nuclear One and Arkansas Nuclear Two); *see* Ex. EAI-8 at 5 for Other Production Plants (Ouachita Generating Facility and Steam Production Plant Facilities listed at Ex. EAI-8 at 1-3).

[22] *See* Ex. EAI-8 at 1-3. The steam production facilities at issue include: Couch Unit 1, Couch Unit 2, Lake Catherine Unit 1, Lake Catherine Unit 2, Lake Catherine Unit 3, Lake Catherine Unit 4, Ritchie Unit 1, Lynch Unit 1, Lynch Unit 2, Lynch Unit 3, Moses Unit 1, Moses Unit 2, Independence Unit 1, White Bluff Unit 1, and White Bluff Unit 2.

unit.[23] ANO-1's steam generators are once-through steam generators and ANO-2's steam generators are recirculating steam generators. Once-through steam generators use straight tubes and recirculating steam generators have a U-shaped tube bundle.[24]

19. Ouachita is a three-unit, 789 MW, natural gas-fired generating facility located near Sterlington, Louisiana in Entergy Louisiana's service territory. Entergy Arkansas owns Ouachita, but it is operated by Entergy Louisiana. At issue are Ouachita Units 1 and 2, which have respective summer seasonal ratings of 250 MW and 236 MW.[25] Each of those units consists of one gas turbine and one steam turbine, referred to in the industry as a one-on-one cycle design.[26] The combustion turbine generator in combination with the steam turbine generator makes up a unit and is individually rated at approximately 179 MW. Entergy Arkansas purchased Ouachita in 2008 from Cogentrix.[27] After Entergy Arkansas purchased the units, which had a 50-year service life, it filed for new depreciation rates with the Arkansas Commission in 2008, based on a 30-year service life.[28]

D. Testimony and Depreciation Studies

20. Testimony was filed by three Entergy witnesses, three Louisiana Commission witnesses and one Commission Trial Staff (Staff) witness.

21. Brian W. Caldwell (Caldwell) provided direct testimony for Entergy on behalf of Entergy Arkansas to support and describe the Depreciation Rates.[29] In addition, Entergy witness Caldwell submitted rebuttal testimony to oppose the Louisiana Commission's

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[23] The Initial Decision refers to these generators as steam generators, but for accounting purposes the functional classification of these generators is Nuclear Power Production Plant accounts (Ex. EAI-3, Attachment No. 2).

[24] Ex. EAI-23 at 6.

[25] The Ouachita units are functionally classified as Other Production Plant for accounting purposes. Ex. EAI-3, Attachment No. 2.

[26] Ex. EAI-19 at 4-5.

[27] *Id*. at 10-11.

[28] Initial Decision, 136 FERC ¶ 63,015 at P 125.

[29] *Id.* P 9 (citing Ex. EAI-1 at 2).

and Staff's positions regarding adjustments to the Depreciation Rates.[30] Jeffery L. Heidingsfelder (Heidingsfelder) also submitted rebuttal testimony on behalf of Entergy to respond to assertions made by the Louisiana Commission's witness Charles W. King (King). Finally, rebuttal testimony for Entergy was submitted by Timothy G. Mitchell (Mitchell).[31] Entergy witness Mitchell responded to the assertions of the Louisiana Commission witnesses Randy A. Futral (Futral) and Lane Kollen (Kollen) about the replacement steam generators.[32]

22. In support of an earlier retail application before the Arkansas Commission, Entergy Arkansas filed testimony and exhibits from John H. Spanos who prepared Entergy's 2008 depreciation study (Spanos Study).[33] In that proceeding, Gayle Freier, a witness for the Arkansas Commission staff presented testimony and exhibits and prepared an alternative depreciation study (Freier Study).[34] In developing her study in the Arkansas Commission proceeding, Freier used the Spanos Study, and also independently produced 1,859 pages of supporting work papers associated with her study.[35] The Spanos Study also used a portion of a 1992 Deloitte & Touche study (AGA/EEI Study) of power plant removal cost in developing dismantlement costs.[36] In addition, Barbara Heavener, on behalf of Entergy, conducted a depreciation study in support of Entergy Arkansas' acquisition of the Ouachita generation plant.[37] These

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[30] *Id.* P 66 (citing Ex. EAI-9 at 1).

[31] *Id.* P 143 (citing Tr. at 21).

[32] *Id.* P 100 (citing Ex. EAI-23 at 1-3).

[33] The Spanos Study is also known as the Gannett Fleming Study in the record. *Id.* P 13 (citing Ex. EAI-1 at 5).

[34] The alternative depreciation study that witness Freier prepared appears in the record as Ex. EAI-36. *Id.* P 1 & n.1.

[35] *Id.* P 118 (citing Ex. EAI-36).

[36] *Id.* The author of the Deloitte & Touche study presented it at a joint AGA/EEI accounting and valuation meeting, but AGA/EEI did not endorse it. This study examined dismantlement costs at 400 specific gas, oil and coal electric generation sites, and contains 4,000 pages of work papers. *Id*.

[37] *Id.* P 119.

underlying studies, which were used in the Arkansas retail rate proceeding, were relied upon by Entergy witnesses as support for the Depreciation Rates in this proceeding.

23. Louisiana Commission witness Kollen submitted testimony to address whether the Depreciation Rates are just and reasonable, and to the extent that they are not, to propose modifications that will result in rates that are just and reasonable.[38] Louisiana Commission witness Futral submitted testimony that the ANO-1 and ANO-2 steam generator replacements should be viewed as non-recurring and removed from the interim retirement data used to develop depreciation rates.[39] Louisiana Commission witness King submitted testimony regarding the decommissioning costs of dismantling production plants.[40]

24. Kevin J. Pewterbaugh (Pewterbaugh) provided direct and answering testimony on behalf of Staff regarding a general discussion of depreciation, and testified that inflation should not be included in decommissioning cost estimates.[41] Staff witness Pewterbaugh also filed cross-answering testimony responding to the Louisiana Commission's witnesses Kollen, King and Futral stating that Entergy Arkansas' decommissioning costs are unsupported and should be excluded.[42]

E. Initial Decision

25. In the Initial Decision, the Presiding Judge found that Entergy met its burden to demonstrate that the Depreciation Rates are just and reasonable. The Presiding Judge rejected the Louisiana Commission's arguments that Entergy's depreciation evidence is based on hearsay and should be accorded no weight in this proceeding. The Presiding Judge found that Entergy's depreciation evidence was wholly relevant and probative and therefore accorded it great weight in the deliberative process. The Presiding Judge also concluded that Entergy's Depreciation Rates should be calculated: (1) assuming a

[38] *Id.* P 18 (citing Ex. LC-1 at 1-2). He has previously testified in Entergy System Agreement tariff proceedings before the Commission and has testified on depreciation issues in other Commission and retail proceedings.

[39] *Id.* P 28 (citing Ex. LC-16 at 1-4).

[40] *Id.* P 31 (citing Ex. LC-24 at 1-2).

[41] *Id.* P 49 (citing Ex. S-7 at 7, 11).

[42] *Id.* P 52 (citing Ex. S-7 at 1, 7).

30-year service life for the Ouachita units;[43] (2) with the inclusion of the steam generator replacements in the interim retirement histories for ANO-2, but not for ANO-1; (3) using the assumed net salvage amounts estimated for Entergy's production units;[44] and (4) using an assumed three percent escalation factor for proposed dismantlement costs to the expected retirement dates estimated for Entergy Arkansas' production units.

F. Depreciation Principles

26. Entergy witness Caldwell, Staff witness Pewterbaugh, and Louisiana Commission witnesses Kollen, King, and Futral all provide testimony describing depreciation techniques, including methods used, approaches to performing depreciation studies and the requirements of those studies.[45] A short recital about depreciation from the witnesses' testimony and the Uniform System of Accounts (USoA)[46] is provided below, the purpose of which is to explain some basics about depreciation and to define some terms commonly used in the discussion of this order.

27. Depreciation represents the cost of an asset's service potential as diminished over its useful life. The USoA defines depreciation as the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance.[47] Some causes which are considered in the loss of service value are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand, and requirement of public authorities.

28. Depreciation is a process of cost allocation, not of valuation; the primary objective of recording depreciation expense is to allocate the cost of utility property to the periods during which the property is used in utility operations, i.e., over the useful service life

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[43] *Id.* P 140.

[44] *Id.* P 165.

[45] Ex. EAI-1; Ex. S-7; Ex. LC-24.

[46] 18 C.F.R. Pt. 101 (2012).

[47] *Id*. pt. 101, Definitions, No. 12 (Depreciation).

and in a systematic and rational manner.[48] In Order No. 618, the Commission found that although it traditionally uses a straight-line depreciation method to allocate service value uniformly over the service life of the assets involved, as long as utilities properly account for the useful service life in a systematic and rational manner, other methods of depreciation may be used.[49] While straight-line depreciation is the predominant method, there are other methods of depreciation, such as accelerated or liberalized depreciation or deferred recovery depreciation, that also meet the primary objective of depreciation accounting.[50] Entergy used straight-line depreciation in this proceeding.[51]

29. Staff witness Pewterbaugh stated that there are three main factors involved in the depreciation calculation of electric facilities: the net plant or the amount of the investment the utility has left to recover; the Average Remaining Life of the plant; and the salvage value of the plant.[52] The net plant is available from company records. The Average Remaining Life of the plant is often determined from historical retirement information, including from company continuing plant inventory records and industry-wide information.[53] The retirement dates of facilities are determined through company studies or estimates, or by comparison to other companies' facilities.[54] What are referred

[48] *Depreciation Accounting*, Order No. 618, FERC Stats. & Regs. ¶ 31,104 (2000). In Order No. 618, the Commission established general rules for depreciation accounting and determined that utilities no longer needed to seek Commission approval for changes in depreciation rates for accounting purposes. Instead, changes in depreciation rates would be reviewed in section 205 or 206 proceedings involving proposals to change prices for jurisdictional service in order to reflect changes in depreciation rates. However, where a utility has a formula rate that references the FERC depreciation accounts as inputs, it must file under section 205 when it changes its depreciation rates for accounting purposes in order to receive approval to reflect the change in depreciation rates in the prices it charges pursuant to the formula rate. Therefore, the Commission generally requires that changes in depreciation accounting must be reviewed and approved under sections 205 before a utility can reflect such changes in rates.

[49] *Id.* P 9.

[50] *Id.* P 4.

[51] Ex. EAI-9 at 12.

[52] Ex. S-1 at 7.

[53] Ex. S-7 at 9-12.

[54] Ex. S-7 at 8.

to as Iowa-type survivor curves are normally used in this process and survivor curves are selected in order to predict future retirements.[55]

30. Service value is the difference between the original cost of the property and its net salvage value.[56] The net salvage value is the salvage value of a property that is retired less the cost of removal.[57] The salvage value is the amount received for a property that is retired, less any expense incurred in connection with the sale or in preparing the property for sale.[58] Salvage value can be a net positive or a net negative value. A negative salvage value requires the utility to pay additional costs to remove the asset and restore the plant site at the end of the asset's life. The Average Remaining Life and salvage values both involve informed judgments and require estimations.[59]

31. Utilities must use a method of depreciation that "allocates in a systematic and rational manner the service value of depreciable property over the service life of the property."[60] The estimated service lives must be "supported by engineering, economic, or other depreciation studies."[61] Utilities must use percentage rates of depreciation that are based on a method of depreciation that allocates the service value of depreciable property to the service life of the property in a systematic and rational manner.[62] Service life is the time between the date the plant is placed into service or leased to others, and the date of its retirement.[63] If depreciation is accounted for on a production basis rather than on a temporal [time] basis, then service life should be measured in terms of the appropriate unit of production.[64] Louisiana Commission witness Kollen stated that the

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[55] Ex. S-7 at 1.

[56] 18 C.F.R. Pt. 101, Definitions, No. 37 (Service Value).

[57] *Id*. pt. 101, Definitions, No. 19 (Net Salvage Value).

[58] *Id*. pt. 101, Definitions, No. 35 (Salvage Value).

[59] Ex. S-7 at 1.

[60] 18 C.F.R. Pt. 101, General Instructions, No. 22(A) (Depreciation Accounting).

[61] *Id.* pt. 101, General Instructions, No. 22(B).

[62] *Id.* pt. 101, General Instructions, No. 22(C).

[63] *Id*. pt. 101, Definitions, No. 36 (Service Life).

[64] *Id*.

shorter the average service life, the greater the depreciation rate, and therefore, the greater the depreciation expense.[65] Similarly, Staff witness Pewterbaugh stated that longer service lives will reduce the depreciation rate.[66]

32. The retirement of an asset occurs when the asset, or components of the asset known as retirement units, are removed from plant in service.[67] Retirements can be interim or terminal and are generally used in discussing the life span of equipment.[68] Interim retirements are the retirements of components between the beginning and end of the life span, whereas terminal retirements all occur at the end or terminal date of the property.[69] Staff witness Pewterbaugh described interim retirements as small in contrast to final abandonments, which he stated are larger cost items.[70]

33. Decommissioning costs, sometimes referred to as final abandonment or retirement costs, are determined through a study of the costs to retire the facility. Louisiana Commission witnesses Kollen and King stated that "decommissioning costs" are the costs of dismantling plant once it has been retired, and the general practice in the utility industry is to accrue the estimated costs of decommissioning over the life of the plant that ultimately will be dismantled.[71] The cost of removal is the cost of demolishing, dismantling, tearing down or otherwise removing utility plant, including the cost of transportation and handling incidental thereto. It does not include the cost of removal activities associated with asset retirement obligations that are capitalized as part of the tangible long-lived assets that give rise to the obligation.[72]

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[65] Ex. LC-1 at 8.

[66] Ex. S-7 at 2.

[67] Ex. EAI-9 at 28.

[68] *Id.*

[69] *Id.* at 29.

[70] Ex. S-7 at 2, 7.

[71] Ex. LC-24 at 5-6.

[72] 18 C.F.R. Pt. 101, Definitions, No. 10 (Cost of Removal).

G. Briefs on Exception, Briefs Opposing Exception and Motion

34. Briefs on exception were filed by Entergy, Staff, the Arkansas Commission, and the Louisiana Commission on October 24, 2011. Briefs opposing exception were filed by Entergy, the Arkansas Commission and the Louisiana Commission on November 14, 2011.

35. On March 30, 2012, Entergy filed a motion requesting that the Commission take judicial notice of two Preliminary Notifications of Event or Unusual Occurrence (Preliminary Notifications) issued by the NRC and a NRC safety evaluation explaining the relevance of the Preliminary Notifications to this proceeding. On April 16, 2012, the Louisiana Commission filed a memorandum in opposition to Entergy's motion for judicial notice.

II. Discussion

36. Based on the record before us, we affirm the determinations of the Presiding Judge. Specifically, we affirm the Presiding Judge's determinations regarding hearsay and expert opinions; the 30-year service life for Ouachita; the inclusion of steam generator replacements in the interim retirement histories for ANO-2, but not ANO-1; dismantlement costs in the depreciation rate; and the three percent inflation factor included in dismantlement costs. Lastly, we clarify depreciation precedent and accounting and ratemaking treatment under Service Schedule MSS-3; and address Entergy's motion to take judicial notice of the NRC Preliminary Notifications.

A. Hearsay and Expert Opinions

1. Initial Decision

37. The Presiding Judge rejected the Louisiana Commission's arguments alleging Entergy witness Caldwell's testimony and reliance on the Freier Study and Spanos Study amount to hearsay. The Presiding Judge stated that, in an administrative proceeding, the issue is whether the evidence is probative; not whether the evidence is hearsay.[73] He found Entergy's depreciation evidence wholly relevant and probative and found that none

[73] Initial Decision, 136 FERC ¶ 63,015 at P 124 (citing Order Denying and Granting Motions to Strike, and Denying Motions to Limit Religitation of Issues, Docket No. ER10-2001-001, May 17, 2011, at 1 n.3 (unpublished) (May 17 Order); Order Providing Clarification, Docket No. ER10-2001-001, May 24, 2011 (unpublished) (May 24 Order); *Old Dominion Elec. Coop.*, 119 FERC ¶ 61,253, at 62,426 (2007)).

of the Louisiana Commission's witnesses had any engineering training, experience or expertise.

38. Although the Presiding Judge stated that both Entergy and the Louisiana Commission presented testimony from generally credible witnesses on accounting and economic issues, he pointed out that none of the Louisiana Commission's witnesses had any engineering training, experience, or expertise. He explained that Louisiana Commission witness Futral admitted that he has no experience in engineering and failed to answer a series of questions testing his knowledge of nuclear engineering principles that bear directly on the resolution of ANO-1 and ANO-2 issues in this case.[74]

39. Further, the Presiding Judge stated that the Louisiana Commission's witnesses "did not even engage in meaningful consultation with engineers before formulating their positions on engineering issues."[75] He explained that the Louisiana Commission retained Dr. William Jacobs (Jacobs) as a consultant but the record contains no information on Jacob's qualifications or background. The Presiding Judge noted that Jacobs, who did not appear at the hearing, merely provided Louisiana Commission witness Kollen with two short emails concluding that the replacement of the ANO-1 and ANO-2 steam generators is a one-time, non-recurring event based on equating design life to service life.[76] The Presiding Judge accorded this evidence little weight in the deliberation process because it lacked substance and foundation, further stating that "[e]vidence that simplistically equates design life to service life does not and cannot tell the entire story necessary for a just and reasonable discussion on the matter."[77] In addition, the Presiding Judge stated that the Louisiana Commission had no ability to make engineering assessments because it lacked sufficient historical data or engineering assessments. Therefore, according to the Presiding Judge, the Louisiana Commission supported its case by including the statements of Entergy engineers as exhibits and submitting accounting and economic critiques of Entergy's depreciation studies.[78]

40. The Presiding Judge also rejected the Louisiana Commission's argument that Freier did not use informed judgment in developing her service life projection for

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[74] *Id.* P 115.

[75] *Id.* P 116.

[76] *Id.*

[77] *Id.*

[78] *Id.* P 117.

Ouachita as set forth in the Freier Study. He specifically found that Freier's activities and conclusions fall within the National Association of Regulatory Utility Commissioners (NARUC) Public Utility Depreciation Practices definition of the use of informed judgment.[79]

41. The Presiding Judge stated that the May 17 Order denied and granted motions to strike, and denied motions to limit relitigation of issues which addressed Entergy's motion to strike portions of the direct testimony of Louisiana Commission witness Kollen, a motion to limit relitigation of issues and Staff's motion to strike cross-answering testimony and several exhibits of the Louisiana Commission.[80] He further referenced the May 17 Order in noting that, "the Commission has found that in an administrative proceeding, the issue is not whether evidence is hearsay, but whether it is probative" in finding that Entergy's depreciation evidence is wholly relevant and probative and therefore, according it great weight in the deliberative process.[81]

2. Brief on Exceptions

42. The Louisiana Commission states that the Presiding Judge erred in relying on expert opinions of persons who did not appear as witnesses in prefiled testimony or at the hearing. According to the Louisiana Commission, the Presiding Judge recognized that the evidence of such experts who did not appear in this case "provides the very basis for [Entergy's] case."[82] In addition, the Louisiana Commission argues that the Presiding Judge accepted these opinions as "'informed judgment' without a firsthand basis to make that assessment, and despite concessions that some of the opinions were not 'informed' and did not reflect 'judgment.'"[83] The Louisiana Commission argues that this stretches the flexibility permitted in administrative proceedings to an unacceptable degree and that the Presiding Judge erred in relying heavily upon the individuals who never appeared at the hearing, while discounting the testimony of those who did appear (i.e., Louisiana Commission witness King and Staff witness Pewterbaugh).[84] It argues that the

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[79] *Id*. PP 120, 126. *See infra* P 59.

[80] *Id.* PP 6, 124 (citing May 17 Order, Docket No. ER10-2001-001 at 1 n.3; *Old Dominion Elec. Coop.*, 119 FERC at 62,426).

[81] *Id.* P 124.

[82] Louisiana Commission Brief on Exceptions at 12.

[83] *Id*. (citing Initial Decision, 136 FERC ¶ 63,015 at P 122).

[84] *Id.* at 12-13.

Commission should not rely on Entergy's witnesses because Entergy relied on the Freier Study, which in turn relied on the Spanos Study, and neither Freier or Spanos were available for cross-examination at hearing.[85]

43. Further, the Louisiana Commission contends that the Presiding Judge improperly gave weight to expert testimony that did not address the relevant issues. Specifically, the Louisiana Commission alleges that the Presiding Judge erred: (1) in relying on Entergy witness Mitchell's testimony that there is no *certainty* that the steam generators will not have to be replaced at ANO-2 when, according to the Louisiana Commission, the issue is whether they are *likely* to be replaced a second time and (2) in relying on Entergy witness Heidingsfelder's testimony regarding the potential life of the rotor in Ouachita to determine the retirement date of the unit even though the Presiding Judge acknowledged that it should only be reflected as a retrofit that affects the service life.[86] The Louisiana Commission challenges the acceptability of Entergy's expert opinions because the testimony must be reliable and relevant to determining depreciation issues.[87] The Louisiana Commission states that, "the presiding judge is supposed to determine whether the opinions are supported by sufficient facts and data and address relevant issues."[88] Furthermore, the Louisiana Commission references *Amorgianos*,[89] as a case in which, "expert evidence was properly excluded after judge reasonably concluded 'that the analytical gap between the studies on which she [the expert in question] relied and her conclusions was simply too great and that her opinion was thus unreliable.'"[90] The Louisiana Commission relies on the Supreme Court's determination in *Daubert* as requiring a "preliminary assessment of whether that reasoning or methodology properly can be applied to the facts in issue."[91] The Louisiana Commission also argues that

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[85] *Id*. at 19.

[86] *Id.* at 19-20.

[87] *Id*. at 20 (citing *Daubert v. Merrell-Dow Pharm.*, 509 U.S. 579, 592-93 (1993) (*Daubert*); *Amorgianos v. Nat'l R.R. Passenger Corp.*, 303 F.3d 256, 270 (2d Cir. 2002) (*Amorgianos*)).

[88] *Id*.

[89] *Id*. (citing *Amorgianos*, 303 F.3d at 270).

[90] *Id*.

[91] *Id*. (citing *Daubert*, 509 U.S. at 592-593).

Entergy did not provide evidence that its engineering experts' conclusions were relevant to the depreciation issues before the Commission.[92]

44. The Louisiana Commission also states that the Presiding Judge incorrectly relies on Entergy's "certainty" standard and the "informed judgment" of Freier to conclude that a second replacement of the ANO-2 steam generators should be factored into the service life determination for that unit. The Louisiana Commission states that these rulings incorrectly provide a basis for accepting the Freier Study, because "certainty" is not the applicable standard and Freier's "informed judgment" could not be tested at the hearing.[93]

45. Finally, the Louisiana Commission argues that Entergy failed to properly implement Entergy Arkansas' depreciation rates because Entergy modified Entergy Arkansas' depreciation expense that will be used in the MSS-3 bandwidth tariff prior to September 27, 2010 without Commission approval. The Louisiana Commission argues that although Entergy addressed this error by making an accounting adjustment in 2011 to correct depreciation expense to reflect the previously-approved rate for the period between June 1, 2010 and the September 27, 2010 effective date established by the Commission, Entergy's correction only applies to Commission depreciation rates in connection with Entergy Arkansas' wholesale for resale tariffs.[94]

3. Briefs Opposing Exceptions

46. Entergy and the Arkansas Commission contend that the Presiding Judge did not improperly rely on the expert opinions of witnesses that did not appear or who did not address relevant issues.

47. Entergy argues that the evidence on the disputed issues raised by the Louisiana Commission and Staff consisted entirely of the analysis and conclusions of Entergy's own witnesses. It also states that the Louisiana Commission spends an extensive portion of its brief citing to various federal court precedents for the propositions that it is inappropriate to allow a witness to present an opinion or testimony not based on that witness' own personal knowledge, but these arguments should be rejected.

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[92] *Id.*

[93] *Id*. at 27.

[94] *Id*. at 63.

48. Both Entergy and the Arkansas Commission argue that it is too late in the process of this proceeding for the Louisiana Commission to make such arguments, as the Louisiana Commission did not object to any testimony or study during the hearing process or request that any limit be placed on the use of that evidence. Also, they point out that the Louisiana Commission did not object at the hearing to the admission of Entergy witness Caldwell's direct testimony that made references to the Freier Study and other material from the Arkansas Commission proceeding. Even if the objection was not waived, the Arkansas Commission contends that the Commission is not strictly bound by the "hearsay rule" as the Commission has held on numerous occasions that Rule 509 of the Commission's Rules of Practice and Procedure, governing the admissibility of evidence, provides for the admission of all evidence that is not "irrelevant, immaterial, or unduly repetitious."[95]

49. Entergy also asserts that the Louisiana Commission presented evidence for the first time in the Louisiana Commission's cross-answering testimony that failed to address any testimony submitted by any party. Entergy argues that the Louisiana Commission is limited to issues that are raised by other parties in their answering testimony and it is impermissible to address issues not raised by other parties in answering testimony. For these reasons, Entergy states that the Presiding Judge was correct in striking the testimony on the grounds that this testimony was filed too late in the process, thereby prejudicing the Staff's ability to file testimony responsive to the issue.

50. Further, Entergy states that the issue set for hearing in this proceeding was the justness and reasonableness of Entergy Arkansas' depreciation rates, not the implementation of the Entergy Arkansas' depreciation rates.[96] Therefore, Entergy concludes that the Louisiana Commission's testimony was outside the scope of the issues set for hearing in this proceeding.

51. Entergy argues that evidence supported by the Louisiana Commission in its offer of proof and struck in the May 17 Order should not be ruled on because it is without merit. Entergy states that, even if the Commission were to agree with the Louisiana Commission that its testimony should have been accepted, Entergy disputes many of the facts alleged by the Louisiana Commission. Specifically, Entergy objects to the Louisiana Commission's assertions that Entergy's implementation has been improper and that Entergy did not make its position on implementation known until March 31, 2011. Entergy rebuts this argument by explaining that because the Presiding Judge struck the

[95] Arkansas Commission Brief Opposing Exceptions at 8-9.

[96] Entergy Brief Opposing Exceptions at 58.

Louisiana Commission's testimony before Entergy's rebuttal testimony was due, Entergy did not have the opportunity to provide rebuttal testimony, cross-examine the Louisiana Commission's witnesses, or to fully brief the issue after the hearing.

52. Entergy argues that the Louisiana Commission's hearsay argument is flawed because it misstates: (1) how the Freier Study was used; (2) the evidence that Entergy presented on the issues that were disputed at the hearing; and (3) the Louisiana Commission's position on the admissibility and appropriate use of that study. Entergy states that it did not solely rely on the Freier Study; it submitted extensive expert testimony by three other expert witnesses based on their own analysis and each presenting their own conclusions regarding the disputed issues. Entergy points out that the Louisiana Commission was able to cross examine these witnesses and the Presiding Judge's findings on those issues are based primarily on the testimony by its witnesses. Entergy also argues that the Louisiana Commission's hearsay argument attempts to take advantage of the fact that the as-filed Depreciation Rates are based on a depreciation study developed by an employee of the Arkansas Commission, e.g., Freier. Entergy states that its witnesses do not know exactly what analysis was conducted or what was considered in reaching conclusions of the Freier Study. According to Entergy, at issue here is the collective evidence submitted by Entergy to support the proposed Depreciation Rates.

53. Entergy argues that the Presiding Judge appropriately relied on expert engineering testimony presented by its witness Caldwell who presented analysis of the expected operating life of Ouachita and the testimony of its witness Mitchell who provided the analysis of the ANO-1 and ANO-2. Entergy argues that Louisiana Commission fails to explain how it could be inappropriate to consider this testimony in this proceeding and how hearsay communications containing reports and correspondence are inappropriate to consider in this proceeding.

54. The Arkansas Commission states that the Presiding Judge was correct to regard the testimony of Entergy's witnesses and the Freier Study as informed judgment and argues that the Louisiana Commission's hearsay arguments are unfounded. In support of the Presiding Judge's reliance on the Freier Study, the Arkansas Commission states that Freier's depositions are well regarded at the Arkansas Commission and in the industry. Further, it states that the Louisiana Commission received a transcript of Freier's testimony and elected to pass on a deposition of Freier in this proceeding.[97] The Arkansas Commission also states that the Louisiana Commission relied upon testimony

[97] Arkansas Commission Brief Opposing Exceptions at 8.

from Jacobs who similarly did not appear before the Presiding Judge to support his study and conclusions.[98]

4. Commission Determination

55. We affirm the Presiding Judge's ruling rejecting the Louisiana Commission's arguments that Entergy's depreciation evidence is based on hearsay. We need not and do not decide here whether the Presiding Judge relied on what would be inadmissible hearsay in a Federal District Court or whether an exception to the hearsay rule would apply because administrative proceedings, such as Commission proceedings, are not bound by the Federal Rules of Evidence.[99] In fact, the technical rules of evidence need not be applied to FPA hearings according to section 308(b) of the FPA.[100] Moreover, the Commission has found that in an administrative proceeding, the issue is not whether evidence is hearsay, but whether it is probative.[101] Accordingly, evidence should not be excluded from administrative proceedings based solely on its characterization as hearsay.

56. We reiterate that per Rule 509(a) of the Commission's Rules of Practice and Procedure, the basic test as to the admissibility of evidence is whether the evidence is of the "kind that would affect reasonable and fair minded persons in the conduct of their daily affairs."[102] As stated above, the Commission has found a witness provided

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[98] *Id. See supra* P 39.

[99] *Midwest Indep. Transmission Sys. Operator, Inc.*, 131 FERC ¶ 61,173, at PP 97-98 (2010), *reh'g denied, Midwest Indep. Transmission Sys. Operator, Inc.*, 136 FERC ¶ 61,244 (2011) (finding that the Commission's discovery rules provide that all discovery responses must identify the preparer (or the person under whose direct supervision the response was prepared) and either be under oath or be accompanied by a signed certification that the response is "true and accurate to the best of that person's knowledge, information, and belief formed after a reasonable inquiry." 18 C.F.R. § 385.403(c); *accord* 18 C.F.R. § 385.408 (providing for a participant to serve on another participant a request for admission of "the genuineness of any document or the truth of any matter of fact", and the genuineness and truth are "deemed admitted" absent objection within 20 days)).

[100] 16 U.S.C. § 825g(b); *see Midwest Indep. Transmission Sys. Operator, Inc.*, 131 FERC ¶ 61,173 at P 97.

[101] *Old Dominion Elec. Coop.*, 119 FERC at 62,426.

[102] *Midwest Indep. Transmission Sys. Operator, Inc.*, 131 FERC ¶ 61,173 at P 97 (citing 18 C.F.R. § 385.509(a)).

substantial evidence having probative value and of the kind that would affect reasonable and fair minded persons where the witness provided detailed testimony and exhibits that showed a thorough knowledge of the case and the proposed methodology.[103]

57. Here, the Presiding Judge accorded little weight to witness testimony that he found did not inform the record, i.e., he accorded little weight to Jacobs' evidence. Jacobs provided Louisiana Commission witness Kollen with two short emails concluding that the replacement of the ANO-1 and ANO-2 steam generators is a one-time, non-recurring event based on equating design life to service life. Louisiana Commission witness Kollen based his position on engineering issues upon this information and opinion provided by Jacobs. The Presiding Judge also noted that during the hearing, Louisiana Commission witness Futral admitted that he has no experience in engineering and failed to answer a lengthy series of questions testing his knowledge of nuclear engineering principles that bear directly on resolution of ANO-1 and ANO-2 issues in this case. Also, we agree with the Arkansas Commission's contention that it was entirely appropriate for the Presiding Judge to rely on Entergy witness Caldwell, a depreciation expert, as supported by the nuclear engineering judgments and opinions of Entergy witness Mitchell.[104] The Louisiana Commission's reliance on *Amorgianos* is misplaced and its allegation that Entergy did not provide evidence that its engineering experts' conclusions were relevant to the depreciation issues before the Commission is easily refuted. As the Presiding Judge considered in his determination, and as we stated above, Entergy witness Caldwell is a depreciation expert whose conclusions were supported by the nuclear engineering judgments and opinions of Entergy witness Mitchell.

58. In response to the Louisiana Commission's argument that the Commission should not rely on Entergy's witnesses because neither Freier or Spanos were available for cross-examination at hearing, we agree with the Presiding Judge that the testimony based on the Freier and Spanos Studies is relevant and probative. Further, we agree with the Arkansas Commission's argument in its brief opposing exceptions that the Louisiana Commission had the opportunity during the hearing to depose witness Freier regarding her depreciation study and testimony from the retail case.[105] Moreover, although the

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[103] *Id.* Further, the Commission stated that, "[w]hile he might not have independently verified every data point used in determining Midwest ISO [Transmission Owner's] lost revenues, administrative proceedings do not impose such a requirement." *Id.* P 98.

[104] Arkansas Commission Brief Opposing Exceptions at 9.

[105] *Id.* at 8.

Louisiana Commission argues that Freier's study is hearsay, it submitted testimony from its witness Jacobs who did not appear at the hearing. The Presiding Judge did not reference Jacob's lack of appearance in his discussion; he determined that the Louisiana Commission witness Kollen's testimony based on Jacob's conclusions should be accorded little weight in the deliberation process because it lacked substance and foundation.[106]

59. The Louisiana Commission also argues that Freier did not use informed judgment.[107] We agree with the Presiding Judge's conclusion that Freier did in fact conform to the NARUC's suggested standard for informed judgment. The Presiding Judge stated that:

> [a] NARUC Public Utility Depreciation Practices manual defines "informed judgment" as the subjective portion of the depreciation study process … based on a combination of general experience, knowledge of the properties and a physical inspection, information gathered throughout the industry, and other factors which assist the analyst in making a knowledgeable estimate.[108]

The Presiding Judge concluded, and we agree, that Freier used informed judgment because:

> [i]n recognition of these requirements, Freier prepared her study by collecting and analyzing historical data from the company, and reviewing the study and supporting work papers that the company offered in support of its request. Freier also toured representative portions of some of [Entergy Arkansas'] facilities to better inform her analysis. She then conducted a typical life and net salvage analysis.[109]

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[106] In determining that Freier used informed judgment, the Presiding Judge found that the record reflects that Freier toured and examined the facilities and it was the totality of the information that she gathered that led to her conclusions. Initial Decision, 136 FERC ¶ 63,015 at P 153.

[107] "Informed judgment" is defined by the NARUC depreciation standards.

[108] Initial Decision, 136 FERC ¶ 63,015 at P 120 (citing Ex. LC-4 at 2).

[109] *Id.* (citing Ex. EAI-12 at 9).

We find that Freier's assessment comports with the NARUC suggested standard for informed judgment and find no error on the part of the Presiding Judge in accepting her testimony and opinion as informed judgment as a basis for the Entergy witnesses' testimony.

60. Last, Entergy argues that we should not rule on the Louisiana Commission's offer of proof. We note that the Presiding Judge had already ruled in the May 17 Order that all blended depreciation rate-related matters are removed from this proceeding.[110] The subject matter of the Louisiana Commission's request was already excluded from this proceeding and the record by the Presiding Judge. As such, we will not rule on the offer of proof.

B. 30-Year Service Life for Ouachita

1. Initial Decision

61. The Presiding Judge concluded that Entergy carried its burden of demonstrating that a change from a 50-year service life to a 30-year service life for Ouachita is just and reasonable.[111] The Presiding Judge rejected the evidence presented by the Louisiana Commission for a 45-year life. The Presiding Judge considered the evidence presented by Entergy, as well as technical documents related to combustion turbine gas generators, such as the guidelines from General Electric, the manufacturer of the turbines in the Ouachita units, to determine that 30 years is the appropriate service life for the Ouachita units.

62. The Presiding Judge rejected comparisons made by the Louisiana Commission to other generating units, specifically, Entergy Arkansas' White Bluff units and Entergy Louisiana's Sterlington 7 unit.[112] In addressing the Louisiana Commission's arguments that White Bluff's rotors can exceed 30 years, the Presiding Judge found that Ouachita's design (a one-on-one cycle design) and operating condition as a peaking unit justify a 30-year service life. Specifically, the Presiding Judge stated that the design means that

[110] May 17 Order, Docket No. ER10-2001-001; May 24 Order, Docket No. ER10-2001-001.

[111] Initial Decision, 136 FERC ¶ 63,015 at P 140.

[112] White Bluff is a conventional coal-fired, base-load, steam electric generating station consisting of two units, approximately 840 MW each. Initial Decision, 136 FERC ¶ 63,015 at P 128 (citing Tr. at 192). Sterlington 7 is a small combined-cycle unit that is not considered a heavy-duty combustion turbine. *Id*. P 137 (citing Tr. at 192).

operation of Ouachita wears the parts on the plant faster than operation does on the White Bluff units.[113] The Presiding Judge found that operationally, frequently starting and stopping combined cycle generating turbines, i.e., peaking or cycling use mode, shortens the life of the combustion turbine and the associated heat recovery steam generator, piping, and steam turbine, as opposed to base-load use which is a more constant usage that does not require frequent starts and stops.[114] The Presiding Judge further rejected the Louisiana Commission's argument that the service life of Ouachita can be extended with plant investment. Although he agreed that plant improvements and replacements can extend plant life, the Presiding Judge found the issue of plant improvements and life extensions to be beyond the scope of the proceeding. He clarified that the issue is only the service life of Ouachita as it exists today and therefore any consideration of retrofitting as suggested by the Louisiana Commission would be beyond the scope of this proceeding.[115]

63. The Presiding Judge also rejected the Louisiana Commission's comparison of Ouachita with Entergy Louisiana's Sterlington 7 unit. The Louisiana Commission argued that Sterlington 7 is an example of a combined cycle unit that has exceeded 30 years of service and argued that Ouachita could as well. The Presiding Judge found this to be an invalid comparison because the Sterlington 7 unit, unlike the Ouachita units, is a two-on-one combined cycle unit and is not a heavy duty combustion turbine, which means that its operation results in less wear to its rotor components than would operation of the Ouachita units. The Presiding Judge found that, as described in a General Electric Bulletin, because the Ouachita units are used as peaking units, the rotors would be more prone to high thermal stresses which would have the effect of reducing the operating life of the units. Therefore, the Presiding Judge found that the Sterlington 7 unit would be less prone to rotor failure than would the Ouachita units.[116]

64. The Presiding Judge also rejected Louisiana Commission witness King's depreciation study to the extent that it attempted to show that a 30-year life span for Ouachita would be too short, compared with the "retirement experience of such plants nationally."[117] The Presiding Judge found that Louisiana Commission witness King's

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[113] Initial Decision, 136 FERC ¶ 63,015 at P 128.

[114] *Id*.

[115] *Id*. P 129.

[116] *Id*. P 137.

[117] *Id*. P 130.

study failed to consider unit design and operating mode. Specifically, the Presiding Judge found that, since the study failed to separate the units by base-load, cycling, intermediate and peaking usage, it could not determine whether the units were used in a comparable manner to the Ouachita units. In addressing the merits of the study, the Presiding Judge found persuasive, among other things, Entergy's argument that it is inappropriate to draw conclusions from comparisons of the Ouachita units to smaller generation units. Therefore, the Presiding Judge found that Louisiana Commission witness King's study was of very little value because it failed to consider generator size, configuration or use. Further, the Presiding Judge rejected Louisiana Commission witness King's contention that retrofitting major components could extend the service life of Ouachita by 25 years. He reiterated that the issue in this proceeding is the revised Depreciation Rates for the Ouachita units in their present state, not with retrofitting.[118] Moreover, the Presiding Judge found that Louisiana Commission witness King failed to properly apply his life extension theory to the revised Depreciation Rates, stating that he should have reflected those retrofittings in the Ouachita interim retirement curves.[119] The Presiding Judge criticized Louisiana Commission witness King for failing to properly categorize evidence, including mislabeling Ouachita as a two-on-one design, when in actuality it utilizes a one-on-one design. Further, the Presiding Judge stated that King gave insufficient thought and attention to detail in designing his study, with no engineering guidance. Consequently, the Presiding Judge stated that the study lacked informed judgment and found that the study had little probative value.[120]

65. Further, in considering the appropriate operating life of a rotor and whether the operating life could be extended beyond the design life, the Presiding Judge described the testimony of Entergy witness Heidingsfelder who testified that if a rotor is at the end of its useful life, an economic decision would need to be made either to replace the rotor if there is enough life in the rest of the facility to warrant the expense, or to retire the plant instead. Heidingsfelder testified that he did not study whether the operating life could be extended beyond the design life, but rather studied the design life based on current conditions. In considering this testimony on rotor life, the Presiding Judge stated that the design life is 25 years, but with good operating and maintenance practices, Entergy witness Heidingsfelder believed it could extend to 30 years.[121]

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[118] *Id*. P 133.

[119] *Id*. P 135.

[120] *Id*. P 139.

[121] *Id*. P 134.

66. Next, the Presiding Judge considered the General Electric Bulletin entitled "Heavy-duty gas turbine operating and maintenance considerations" presented as Exhibit EAI-21. The Presiding Judge rejected the Louisiana Commission's labeling the bulletin as a manual, which he stated suggests that it is an exhaustive discussion of General Electric's product, when in reality it is simply the manufacturer's suggestions regarding regular maintenance scheduling. The Presiding Judge considered witness Heidingsfelder's description of the bulletin, in particular the nature of cyclic operations. He stated that Entergy witness Heidingsfelder testified that the Ouachita units are now being operated in peaking mode. However, the evidence shows that the units have been used both for cyclic and peaking needs, but not for baseload. In any event, the Presiding Judge stated that none of the General Electric Bulletin scenarios illustrates rotor lives greater than 30 years, which is in accord with Entergy's position.[122]

2. Brief on Exceptions

67. The Louisiana Commission argues that the Presiding Judge erred in finding that Entergy provided an adequate service life study to support its 30-year life estimate.[123] The Louisiana Commission states that the 30-year service life was not supported by a contemporaneous, detailed economic, engineering or other depreciation study, as required by General Instruction No. 22.[124] In fact, the Louisiana Commission states that no study was used to develop the 30-year service life and *no study* was filed in support of the 30-year life with the rate change application.[125]

68. The Louisiana Commission also attacks the evidence presented by Entergy relating to the Freier Study. The Louisiana Commission states that the record evidence of Freier's "informed judgment" consists only of two pages of a deposition taken by the Louisiana Commission in Docket No. EL10-55-000. The Louisiana Commission further states that those pages do not suggest that the Freier Study analyzed the service life assumption for Ouachita or any other Entergy Arkansas units, and no logical inference can be drawn from the Freier Study's statements that she undertook such an analysis.

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[122] *Id*. P 136.

[123] Louisiana Commission Brief on Exceptions at 33.

[124] *Infra* P 82. 18 C.F.R. Pt. 101, General Instructions, No. 22(B) requires that "estimated useful service lives of depreciable property must be supported by engineering, economic, or other depreciation studies."

[125] Louisiana Commission Brief on Exceptions at 36-37 (citing 18 C.F.R. Pt. 101, General Instructions, No. 22).

The Louisiana Commission states that Freier's deposition transcript shows that she did nothing more than accept unexamined the 30-year life estimate for Ouachita and Freier stated that she did not do a service life analysis for the Ouachita units.[126] Further, the Louisiana Commission states that the depreciation rates approved by the Arkansas Commission and filed in this case were adopted as part of an overall rate case settlement. As with any settlement, the Louisiana Commission states that the depreciation rates were agreed upon in the context of unknown tradeoffs, and were not based on any kind of study or informed judgment.[127]

69. The Louisiana Commission also challenges the Presiding Judge's reliance on the after-the-fact analysis done by Entergy witness Heidingsfelder. The Louisiana Commission states that the after-the-fact analysis performed by Heidingsfelder does not fulfill the Commission's requirements because: (1) it is the study of the design life of combustion turbine rotors, rather than a study of Ouachita service life; (2) the study was performed after-the-fact to support a litigation position; and (3) it fails to consider economic factors in assessing Ouachita service life.[128] The Louisiana Commission states that the after-the-fact analysis of rotor life that was performed by Entergy witness Heidingsfelder was completed solely for the purpose of litigation, long after the 30-year service life was selected.[129] The Louisiana Commission states that the Heidingsfelder analysis was not used to develop or support the 30-year life estimate and was not provided contemporaneously with Entergy's revised Depreciation Rate filing. The Louisiana Commission states that Entergy witness Heidingsfelder was not involved with the Freier Study or Spanos Study, was not familiar with those studies, and did not provide any service life information for them. Further, the Louisiana Commission states that Entergy witness Heidingsfelder readily admitted that he: (1) is not a depreciation expert; (2) has no specialized training or professional experience in depreciation; (3) has never performed a depreciation study; and (4) has never provided generator service life assumptions for a depreciation study. In addition, the Louisiana Commission states that Entergy witness Heidingsfelder confirmed that he does not have any knowledge regarding the proper way to determine service life for a depreciation study and no opinion regarding whether design life should be used to set retirement dates for a depreciation

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[126] *Id*. at 39.

[127] *Id*.

[128] *Id*. at 34. The Louisiana Commission is referring the Freier's deposition in the proceeding under Docket No. EL10-55-000.

[129] *Id*. at 37.

study. The Louisiana Commission states that Entergy witness Heidingsfelder's analysis does not meet Commission requirements and the Presiding Judge erred in relying on it.[130]

70. The Louisiana Commission also contends that the Initial Decision should be reversed because Entergy did not follow what the Presiding Judge found to be the proper methodology for determining service life. Specifically, the Louisiana Commission argues that the Presiding Judge found that Louisiana Commission witness King should have reflected retrofitting (i.e., rotor replacement) in the Ouachita interim retirement curves but failed to do so.[131] The Louisiana Commission states that if its witness King should have reflected the rotor replacement in his interim retirement curve, then Entergy certainly should have included the rotor replacement in the interim retirement curve that was actually used to develop the proposed rates. The Louisiana Commission states, however, that Entergy did not treat the rotor replacement as an interim retirement, and instead treated rotor replacement as the terminal retirement of the unit.[132] The Louisiana Commission states that the Initial Decision is internally inconsistent because it recognizes that a rotor replacement should be treated as an interim retirement, but fails to enforce its own methodology. Therefore, the Louisiana Commission states that the Initial Decision should be reversed.

3. Brief Opposing Exceptions

71. Entergy states that its proposed depreciation rates were supported by the Freier Study. According to Entergy, the Freier Study complies with General Instruction No. 22, which requires that estimated useful service lives of depreciable property be supported by engineering, economic, or other depreciation studies.[133] Entergy states that the 30-year service life assumption contained in the detailed study it filed in the Arkansas retail proceeding was not challenged. It was not until this proceeding that Louisiana Commission witness King challenged, in his answering testimony, the 30-year service life estimate and instead advocated the use of a 45-year service life, Entergy explains.[134] At this point, Entergy states that it filed the rebuttal testimony of Entergy witness

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[130] *Id.*

[131] *Id*. at 35 (citing Initial Decision, 136 FERC ¶ 63,015 at P 135).

[132] *Id*.

[133] Entergy Brief Opposing Exceptions at 18-19 (citing 18 C.F.R. Pt. 101, General Instructions, No. 22(B)).

[134] *Id*. at 20.

Heidingsfelder, who provided support for a 30-year operating life estimate and explained why the Louisiana Commission witness King's analysis supporting a 45-year service life was flawed.[135]

72. Entergy states that although its witness Heidingsfelder's testimony was not submitted as part of Entergy's initial filing, that is irrelevant. It states that the Louisiana Commission cites to no requirement in the USoA that requires the contemporaneous filing with depreciation rate filings of studies supporting each service life assumption underlying the depreciation rates being filed. Entergy contends that filing its witness Heidingsfelder's analysis in its rebuttal testimony in response to the Louisiana Commission's evidence was appropriate.[136]

73. Further, Entergy disagrees with the Louisiana Commission's argument that the Freier Study fails to satisfy General Instruction No. 22 because she did not exercise "informed judgment." Entergy states that this is in direct conflict to the findings of the Presiding Judge, and irrelevant.[137] Entergy states that it presented the testimony of Caldwell and Heidingsfelder to support the service life assumption for the Ouachita units and is not relying on the Freier Study's conclusions on this issue.[138] Entergy also refutes any implication by the Louisiana Commission that parties to the Arkansas retail rate proceeding agreed on a 30-year service life for Ouachita as a compromise, instead of based on the Freier Study's analysis. Entergy further states that the 30-year service life assumption in the Freier Study analysis was presented as the Arkansas Commission staff's litigation position in the Arkansas retail rate proceeding.[139]

74. Entergy also disagrees with the Louisiana Commission's claim that the Presiding Judge erred in not requiring that Entergy provide an economic analysis of Ouachita's service life. Entergy states that it provided a detailed engineering analysis of the operating life of the Ouachita units in the rebuttal testimony of its witness Heidingsfelder. In contrast, Entergy states that the Louisiana Commission provided neither an economic nor an engineering study; instead, it included an "other" study consisting of a compilation of historical data regarding non-comparable generation units. Entergy states that the

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[135] *Id*.

[136] *Id*.

[137] *Id*.

[138] *Id*. at 20-21.

[139] *Id*.

analysis sponsored by the Louisiana Commission witness King is flawed and the Presiding Judge's holding on this issue is both consistent with the requirements of General Instruction No. 22 and the record evidence.[140]

75. Also, Entergy disagrees with the Louisiana Commission's criticism of Entergy witness Heidingsfelder's study because it is a study of *design* life as opposed to *operating* life.[141] Entergy states that recent model combined cycle generating turbines like Ouachita have, at best, 16 years of operating history and the Ouachita units themselves have only been in service for nine years.[142] Therefore, in the absence of relevant and comparable operating history, Entergy states that design life and other technical factors provide a reasonable basis upon which to estimate a unit's operating life. Moreover, Entergy states that its witness Heidingsfelder did not solely rely on the design life of the Ouachita units in reaching his conclusion that an operating life of 30 years for those units is a reasonable assumption, but also relied on the expected operating life of the combustion turbine rotor. Entergy also states that Heidingsfelder's analysis was supported by industry reference guides such as the Electric Power Research Institute Technical Assessment Guide and the Department of Energy's National Energy Technology Guide, which indicate that newer-model combined cycle generating turbines like the Ouachita units have 30-year operating lives.[143]

76. Entergy also states that the Louisiana Commission falsely claims without any record support that Ouachita's original owners depreciated the asset over a 50-year period, which it states undermines Entergy's proposed use of a 30-year life. Although the Louisiana Commission cites to the Initial Decision in support of this argument, Entergy states that some clarification is in order.[144] Entergy states that all that is known about the original owner of the plant, Cogentrix, is that it designed Ouachita to accommodate a facility design life of 25 years. Entergy states that there is no evidence in the record regarding what service life Cogentrix used for depreciation purposes, and certainly no evidence to support the conclusion that Cogentrix depreciated the Ouachita units over 50 years, as the Louisiana Commission claims.[145] Entergy states that the Presiding Judge

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[140] *Id*.

[141] *Id*. at 22.

[142] *Id*. (citing Ex. EAI-19 at 16).

[143] *Id*. at 23 (citing Ex. EAI-19 at 15).

[144] *Id*.

[145] *Id*.

apparently confused the facts where, in 2007, Entergy Arkansas was in a retail rate proceeding before the Arkansas Commission requesting approval of the Ouachita acquisition and for incorporation into rates. In that proceeding, Entergy states that its witness proposed a 50-year service life for Ouachita for purposes of setting depreciation rates.[146] However, Entergy states that there is no evidence that the 50-year life was based on the prior seller's depreciation accounting. Entergy states that is unknown.[147]

77. Entergy states that the initial 50-year service life assumption for Ouachita was based on Entergy Arkansas' other gas-fired units. Entergy states that because Entergy Arkansas' prior depreciation study was based on then-existing gas-fired units, which utilized 50-year service lives, depreciation rates for the new Ouachita facility were initially set on that basis. Entergy states that this assumption was then used until a new rate case or depreciation study occurs. And as a result of Entergy Arkansas' last retail rate case, in which there were depreciation studies and in which depreciation rates were approved on a 30-year service life for Ouachita units, Entergy is now before this Commission requesting approval of the same depreciation rates for Entergy Arkansas.[148]

78. Further, Entergy rejects the comparison by the Louisiana Commission of the Ouachita units to other Entergy units that have lasted in excess of 30 years, specifically, Entergy Louisiana's Sterlington 7 and Entergy Arkansas' White Bluff units. Entergy states that because Sterlington 7 is also a combined cycle generating turbine and currently has an estimated operating life of 52 years, the Louisiana Commission argues that the Ouachita units should be able to last that long as well. However, Entergy states that Sterlington 7 is a 38-year-old, two-on-one combined cycle generating turbine with vintage model 7000B combustion turbines rated at 59 and 66 MW. The Ouachita units, on the other hand, are nine year old combined cycle generating turbines with heavy-duty General Electric 7FA 179 MW combustion turbines in a one-on-one configuration. Entergy states that based on these differences and their operating characteristics, the Presiding Judge correctly concluded that the estimated service life of the Ouachita units cannot be extrapolated from the operating history of Sterlington 7.[149]

79. With regard to the White Bluffs units, Entergy states the Presiding Judge was correct to conclude that the White Bluffs units and Ouachita units are too dissimilar to

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[146] *Id*. at 24 (citing Tr. at 370; Ex. LC-53).

[147] *Id*.

[148] *Id*. at 24-25.

[149] *Id*. at 25.

draw any conclusions about how the operating history of one plant may be relevant to determining the estimated service life of the other. Entergy states that the White Bluff generating station is a base-load, coal-fired conventional steam electric plant consisting of approximately 840 MW units placed in service in the early 1980s. Compared to the Ouachita units, Entergy states that the Presiding Judge correctly concluded that the fact that the White Bluff coal units have exceeded their design lives (albeit with over $150 million in renovations) is not relevant in determining the estimated service life of the Ouachita units as they exist today.[150]

80. Entergy also states that there is no internal inconsistency as argued by the Louisiana Commission regarding the inclusion of rotor replacement as an interim retirement. Entergy states that the Louisiana Commission mischaracterizes the Initial Decision. Entergy states that the Presiding Judge discussed what he characterized as Louisiana Commission witness King's "life extension theory," whereby the operating life of a unit might be extended through retrofits or component replacements.[151] Entergy states that if that were the basis for supporting a 45-year service life, the Presiding Judge reasoned, those retrofits, or interim retirements, should be included in the retirement curves. Entergy states that since Louisiana Commission witness King failed to do that in his life extension theory, the Presiding Judge determined the theory was flawed.[152] Entergy states that, since the Presiding Judge rejected Louisiana Commission witness King's 45-year service life proposal that depends on an assumed rotor replacement, there was no need for the Presiding Judge to provide for a corresponding rotor replacement in the interim retirement history.[153] Entergy states there is no evidence that Entergy Arkansas has ever replaced the combustion turbine rotor in any modern combined cycle generating turbine, let alone the combustion turbine rotors in the Ouachita units, so it would be impossible to include such retirements in the curve. As the Presiding Judge correctly observed, Entergy states that the issue is the service life of Ouachita as it exists today. Given the lack of operating history of combined cycle generating turbines with General Electric 7FA combustion turbines, Entergy states that the most reliable evidence is the engineering analysis performed by Entergy witness Heidingsfelder. Entergy states that the Presiding Judge found that analysis compelling and determined that it satisfied

[150] *Id*. at 26.

[151] *Id*. at 27 (citing Initial Decision, 136 FERC ¶ 63,015 at P 135).

[152] *Id*.

[153] *Id*. at 28.

Entergy's burden. Therefore, Entergy states there is no inconsistency in the Initial Decision on this issue.[154]

4. Commission Determination

81. We affirm the Presiding Judge's determination that Entergy carried its burden of proving that a 30-year service life estimate for Ouachita was just and reasonable. We find that Entergy witness Heidingsfelder's analysis satisfies the requirements under General Instruction No. 22. Since the Louisiana Commission witness King challenged the 30-year life in his answering testimony, it was appropriate for Entergy to file the rebuttal testimony of Entergy witness Heidingsfelder. Finally, Entergy filed a study with its proposed depreciation rates in its in initial filing and in its direct testimony. Therefore, we reject the Louisiana Commission's argument that Entergy failed to file a detailed study.

82. We find that Entergy witness Heidingsfelder's testimony on the appropriate service life of the Ouachita units is relevant to the underlying depreciation studies presented by Entergy Arkansas in this proceeding and therefore the Presiding Judge appropriately relied on his testimony, among other things, in determining the appropriate service life for Ouachita. As noted by the Presiding Judge, Entergy witness Heidingsfelder did not solely rely on design life in analyzing the service life issue. Heidingsfelder also examined technical materials provided by the original developer and owner of the plant, which indicated that Ouachita was designed for 25 years of operation.[155] He also examined technical documents provided by General Electric regarding the expected service life of a rotor in a General Electric 7FA combustion turbine, the kind used in the Ouachita units. He testified that the rotor is the most central and most expensive component of a combined cycle gas turbine and defines the life of the unit.[156] He testified that the decision to replace the rotor at the end of its useful life would involve an economic analysis that includes consideration of the cost of rotor replacement, the remaining life left in the unit and other alternatives, such as purchasing or constructing new units or plants, or entering into power purchase agreements.[157] Therefore, we agree with the Presiding Judge that Entergy witness Heidingsfelder's study

[154] *Id*.

[155] *See* Ex. EAI-19 at 7.

[156] *Id*. at 9.

[157] *See* Tr. at 195-196.

constitutes a well-reasoned analysis that satisfies the requirements of General Instruction No. 22.

83. We agree with the Presiding Judge that Louisiana Commission witness King's study is of limited value.[158] It is not logical to compare the Ouachita units to smaller generation units and units with different configurations. The Ouachita units are nine-year old combined cycle gas turbines with heavy-duty General Electric 7FA 179 MW combustion turbines in a one-on-one configuration.[159] Sterlington 7 is a 38-year old, two-on-one unit, with combustion turbines rated at 59 and 66 MW.[160] Further, Entergy Arkansas' White Bluff generating station is a base-load, coal-fired conventional steam electric plant consisting of two approximately 840 MW units placed in service in the 1980s. Therefore, we agree with the Presiding Judge that the generating units are too dissimilar to draw any conclusions regarding the appropriate service life for the Ouachita units.[161]

84. We reject the Louisiana Commission's argument that the Initial Decision contains an internal inconsistency, based on the Presiding Judge's discussion of Louisiana Commission witness King's life extension theory.[162] King presented a study assuming that the operating life of a unit might be extended through retrofits or component replacements. In considering King's theory, the Presiding Judge found that King should have included the retrofittings in his interim retirement curve. The Louisiana Commission argues that since the Presiding Judge found that King should have included the retrofits in his retirement curve, Entergy should have been required to include the retrofits in its retirement curve. We agree with Entergy that the Louisiana Commission mischaracterized the Presiding Judge's discussion of this issue. In considering a 45-year life presented by Louisiana Commission witness King, the Presiding Judge reasoned that those retrofits, or interim retirements, should be included in the retirement curves presented in his study. The Presiding Judge's discussion was based on an assumed rotor replacement, presented by King. Entergy states that it has never replaced the combustion turbine rotor in any modern combined cycle gas turbine or in the Ouachita units, so it

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[158] Initial Decision, 136 FERC ¶ 63,015 at P 131.

[159] Entergy Brief Opposing Exceptions at 25.

[160] *Id*.

[161] Initial Decision, 136 FERC ¶ 63,015 at P 131.

[162] *Id*. P 135.

would be impossible to include such retirements in the curve.[163] We find that the Presiding Judge was addressing King's specific scenario whereby the plant could be extended by retrofits. However, as the Presiding Judge correctly found, the relevant issue is the service life of Ouachita as it exists today, not what effects retrofits would have on extending plant life.[164] Therefore, we find no internal inconsistency regarding this issue.

85. Finally, we disagree with the Louisiana Commission's argument that the 30-year service life should be rejected because it was negotiated as a part of a retail rate settlement. We note that there was a settlement in the Arkansas retail rate proceeding that affected Entergy Arkansas' Depreciation Rates filed in this proceeding. Entergy states that the 30-year service life assumption for Ouachita presented in Freier's analysis was presented as the Arkansas Commission staff's litigation position. However, Entergy states that it was not a negotiated settlement position.[165] Regardless of how it was presented in the Arkansas retail rate proceeding, we find that the Ouachita service life issue was squarely addressed and vetted in this proceeding, with filed testimony and exhibits addressing the appropriate service life for the Ouachita units. Therefore, we find the Louisiana Commission's argument to be irrelevant.

C. Inclusion of Steam Generator Replacements in the Interim Retirement Histories for ANO-1 and ANO-2

1. Initial Decision

86. Entergy Arkansas' depreciation rates for ANO-1 and ANO-2 were calculated using certain assumptions including interim retirement curves,[166] reflecting the retirement of ANO-2's steam generators, which were replaced in 2000, and the retirement of ANO-1's steam generators, which were replaced in 2005. The issue here is whether the retired ANO steam generators should be removed from the interim retirement histories in the depreciation study, based on the Louisiana Commission's contention that the steam

[163] *See* Entergy Brief Opposing Exceptions at 28.

[164] Initial Decision, 136 FERC ¶ 63,015 at P 129.

[165] Entergy Brief Opposing Exceptions at 21.

[166] Interim retirements are defined as retirements of plant prior to the date of final retirement and represent the cost of plant that was retired (in the case of actual historical interim retirements) or will be retired (in the case of projected interim retirements) due to physical wear and tear or degradation. The costs of the replacement plant are included in the original cost of plant. *See* Ex. LC-1 at 7.

generator replacements are not likely to be repeated. The Presiding Judge found that Entergy had met its burden of showing that Entergy Arkansas' depreciation rates should be calculated with the inclusion of the steam generator replacements in the interim retirement histories for ANO-2, but not ANO-1.

87. The Presiding Judge described Arkansas Nuclear One, which has two energy production units, ANO-1 and ANO-2, each unit having two steam generators. ANO-1 was placed in service in 1974 and its NRC license life is to 2034. ANO-2 was placed in service in 1980 and its NRC license life is to 2038. The steam generators were constructed with steam tubing that was manufactured with a metal known as "Alloy 600."[167] The Presiding Judge found that the testimony provided by Entergy witness Mitchell was more credible than that of Jerry Yelverton (Yelverton) who testified before the Arkansas Commission.[168] At the time of his testimony before the Arkansas Commission in 1998, Yelverton forecasted an assumption of how the units would be run; by contrast, Entergy witness Mitchell's testimony was an experience-based statement of how the units are actually used.[169] The Presiding Judge noted that, "both units experienced a sufficient number of tube stress corrosion cracking, with resultant tube plugging, to require replacement of the [steam generators]."[170] When the ANO-1 steam generators were replaced in 2005 and 2000, respectively,[171] Entergy Arkansas replaced them with a new version, Alloy 690 tubing, rather than replacing the units with the original Alloy 600 tubing. The Presiding Judge stated that Alloy 600 is subject to cracking, but Alloy 690 is manufactured with a newer and better heat treatment process that improves resistance to cracking.[172]

88. The Louisiana Commission argued that the proposed depreciation rates included in Account 322 reflect projected interim retirements for ANO-1 and ANO-2 based on the assumption that the replacements of the steam generators at both units are recurring

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[167] Initial Decision, 136 FERC ¶ 63,015 at P 141.

[168] Yelverton testified on behalf of Entergy in a 1998 proceeding before the Arkansas Commission regarding the then-to-be-constructed ANO-2. *Id.* P 143.

[169] *Id.*

[170] *Id*. P 142.

[171] *Id*.

[172] *Id*. (citing Ex. LC-45 at 32).

events.[173] The Louisiana Commission argued that Entergy had provided no evidence that the steam generator replacements are recurring or that such an assumption should be incorporated into the projection of interim retirements and the depreciation rates for ANO-1 and ANO-2.[174]

89. In addressing this issue, the Presiding Judge discussed the appropriate accounting standard applicable to the determination of whether to include the retired steam generators in the retirement histories for ANO-1 and ANO-2, as well as the expert engineering testimony regarding the likelihood that the replacement steam generators would themselves need to be replaced before the end of the service lives for ANO-1 and ANO-2. The Presiding Judge stated that Louisiana Commission witnesses King, Kollen and Futral argue that the steam generator replacements are non-recurring events and as such, should be removed from the Entergy Arkansas depreciation studies. The Presiding Judge found that the Louisiana Commission witnesses were qualified to argue this on the basis of accounting and economic evidence, although they are unqualified to address engineering issues.[175] However, the Presiding Judge found, the accounting treatment is not in dispute. The Presiding Judge found that, pursuant to the NARUC Depreciation Manual, the steam generator replacements should be included in the interim retirement histories unless it is determined that the replacement steam generators are unlikely to be retired prior to the end of the service lives of ANO-1 and ANO-2.[176] The NARUC Depreciation Manual[177] states that "in general, historical data used to forecast future retirements should not contain events that are either anomalous or unlikely to recur." Actual historical data for interim retirements is used to develop projected interim retirements.[178]

90. In considering the engineering aspect of the likelihood that the steam generators would need to be replaced again, the Presiding Judge discussed the particular problems associated with ANO-1 and ANO-2 since they came on-line, in particular the problems

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[173] *Id.* P 148 (citing Ex. LC-1 at 13).

[174] *Id*.

[175] *Id.*

[176] *Id*. P 152.

[177] Submitted as Ex. LC-3.

[178] Ex. LC-1 at 12.

associated with the tubing used in the steam generators.[179] The evidence indicated that the likelihood of replacing the steam generators would depend greatly on how resistant the new Alloy 690 is to cracking. The Presiding Judge further stated that one might reasonably expect that with the use of the improved Alloy 690 tubing, ANO-1 and ANO-2 could last at least as long as the original unit.[180] However, the Presiding Judge also stated that while Alloy 690 is more resistant to stress corrosion cracking, it is softer than Alloy 600, and therefore is more prone to denting and abrasion wear damage.

91. However, the Presiding Judge also stated that the discrepancies in service lives for ANO-1 and ANO-2 result from differences in design and operating conditions. The Presiding Judge described the differences between ANO-1 and ANO-2. ANO-1 is a "once-through" steam generator, while ANO-2 is a "recirculating" steam generator. The Presiding Judge stated that once-through steam generators have 15,000 steam tubes, while recirculating steam generators have only 10,000.[181] The Presiding Judge also noted that ANO-2 had been uprated,[182] potentially reducing its service life to less than the unit's original life.[183] The Presiding Judge stated that it is uncertain whether Alloy 690 will obviate the need to replace the steam generators in the future.

92. The Presiding Judge noted that there already has been evidence of degradation at ANO-2 associated with the softer nature of Alloy 690.[184] However, in response to Louisiana Commission witness Kollen's argument that the issue of steam generator replacement is solely related to the type of metal used in the tubing, the Presiding Judge found that there is more to determining the life of the replacement steam generators than a consideration of the resistance to corrosion of the steel used in the steam tubing.[185] The

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[179] Initial Decision, 136 FERC ¶ 63,015 at P 144.

[180] *Id*. P 145.

[181] *Id*. P 141.

[182] Uprating a nuclear plant results in increased pressure and/or temperature in the flow of steam from the steam generator. *See id*. P 143 (citing Tr. at 45-47, 117-18; Ex. EAI-23 at 14).

[183] *Id*. P 145. Entergy witness Mitchell testified that ANO-2 was uprated by 7.5 percent in 2008.

[184] *Id*. P 142.

[185] *Id*. P 151.

Presiding Judge found that an analyst must consider the totality of the characteristics of the replacement material to determine whether its use is likely to render another replacement during the service life of the steam generators unnecessary.

93. The Presiding Judge concluded that he agreed with the Freier Study's conclusions that the ANO-2 steam generators may have to be replaced before their NRC license life expiration, but not the ANO-1 steam generators, which he concluded should last to their license expiration date.[186] The Presiding Judge found that the Freier Study's conclusions as to replacement of the ANO-2 steam generators were supported by engineering evidence in this case and also found that she exercised informed judgment in considering interim replacements of both the ANO-1 and ANO-2 steam generators.[187]

2. Briefs on Exception

94. In its brief on exception, Entergy states that there is no basis for the Presiding Judge to make different holdings with regard to ANO-1 and ANO-2 on the steam generator replacement issue. Entergy states that, for ANO-2, the Presiding Judge correctly applied the standard set forth in the NARUC Depreciation Manual and found that it is not possible to conclude that it is unlikely that the replacement steam generators for ANO-2 will be replaced, and therefore the retired steam generators for ANO-2 should be included in the interim retirement history for that unit. However, with regard to ANO-1, he held that the replacement steam generators for ANO-1 are unlikely to be retired and therefore should not be included in the interim retirement history for that unit. Entergy states that this conclusion should be reversed.[188]

95. Entergy states that the Presiding Judge found that its witness Mitchell, the only qualified engineering expert to testify on the steam generator replacement issue, "testified that he does not yet have enough data on the characteristics of Alloy 690 to opine whether the new [steam generators] will last to their 40-year design life."[189] Consequently, Entergy states that the Presiding Judge found that the decision to include the steam generator retirements in ANO-2 in the retirement history for that unit was

[186] *Id*. P 149.

[187] *Id*. P 154.

[188] Entergy Brief on Exceptions at 6-7.

[189] *Id*. at 7 (citing Initial Decision, 136 FERC ¶ 63,015 at P 153).

"supported by engineering evidence in this case," and therefore that decision was upheld as reasonable.[190]

96. Entergy states, however, that, the Presiding Judge did not reach the same conclusion about the retired steam generators for ANO-1. Instead, Entergy states that he held that the retired steam generators should be removed from the ANO-1 retirement history. Entergy states that the primary reason presented for this conclusion is that "[o]ne might reasonably expect that with the use of the improved Alloy 690 tubing, ANO-1 and ANO-2 could last at least as long as the original units, but not necessarily longer."[191] Entergy states that because the original ANO-1 steam generators had lasted 31 years, the Presiding Judge found that the replacements should be expected to last through the remainder of the 60-year service life of ANO-1. Furthermore, Entergy states that the Presiding Judge concluded, based on his review of the warranties on the replacement steam generators, that the duration of the ANO-1 warranty was informative of the expected operating lifetime of the steam generators with Alloy 690 tubing. Entergy states that the Presiding Judge found that this warranty supports a forecast that the ANO-1 service life will extend to that unit's NRC license expiration date.[192]

97. Entergy states, however, that this conclusion can only be reached by giving weight to the testimony of the Louisiana Commission witnesses that the Presiding Judge found lacked the necessary expertise to provide such an opinion. Moreover, Entergy states that the Presiding Judge's reliance on the warranty provisions is contrary to the expert testimony cited in the Initial Decision, that "warranties are negotiated terms, so if warranty duration is the result of competitive business strategy, it cannot provide engineering information about operating lifetime."[193]

98. Entergy states that the testimony of its witness Mitchell, the only qualified expert, was that a lifetime projection for any of the Arkansas Nuclear One steam generators is not possible at this time. Entergy states that he testified that "it is not possible today to state with certainty whether the steam generators will or will not require replacement again."[194] Entergy states that, given that the only witness with the necessary expertise

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[190] *Id*. (citing Initial Decision, 136 FERC ¶ 63,015 at PP 154-55).

[191] *Id*. (citing Initial Decision, 136 FERC ¶ 63,015 at P 145).

[192] *Id*. (citing Initial Decision, 136 FERC ¶ 63,015 at P 147).

[193] *Id*. at 7-8 (citing Initial Decision, 136 FERC ¶ 63,015 at P 111).

[194] *Id*. at 8 (citing Ex. EAI-23 at 9).

testified that it is not possible to know today how long the steam generator replacements will last, the Presiding Judge's holding that one can reasonably expect the ANO-1 replacement generators to last until the end of the ANO-1 service life is not supported by the record.[195] Therefore, Entergy states that the Commission should reverse that holding and instead rule that it is appropriate to include the steam generators in the retirement histories for both ANO-1 and ANO-2.

99. In its brief on exceptions, the Arkansas Commission also states that the Presiding Judge's differentiation of ANO-1 from ANO-2 is in error. The Arkansas Commission states that there is insufficient evidence here to conclude, as the Presiding Judge does, that the steam generator for ANO-1 is certain to *not* need to be replaced within its remaining NRC license life which ends in 2034. The Arkansas Commission states that the Presiding Judge was right to conclude that there is no such certainty in the case of the ANO-2 steam generator. The Arkansas Commission states that the same conclusion applies to ANO-1.[196]

100. The Arkansas Commission states that the engineering judgment of Entergy witness Mitchell supports the conclusion that both ANO-1 and ANO-2 steam generators may need replacement before their respective service lives end. The Arkansas Commission states that the warranty that was provided by Framatome for ANO-1 serves as no basis to depart from Entergy witness Mitchell's expert opinion, in this regard.[197]

101. The Arkansas Commission states that, as Entergy witness Mitchell testifies, the following is true for both ANO-1 and ANO-2: (1) even though Alloy 690 is more corrosion-resistant than the Alloy 600 tubing material it replaces, the new Alloy 690 material has many new and different vulnerabilities; (2) susceptibility to corrosion is only one of several aspects of steam generator deterioration and the use of Alloy 690 in the replacement steam generators for ANO-1 and ANO-2 marks the third attempt at finding a better material for steam generator tubing and history suggests that Alloy 690 is not a panacea to the steam generator failure problems encountered by these units; (3) there is no consensus in the nuclear industry on the best material to employ for steam generator tubing; (4) *new* nuclear unit steam generators in the industry have already experienced thousands of tube wear indications that may limit the lives of those steam generators; (5) the ANO replacement steam generators already have experienced such wear issues and (6) the characteristic "incubation period" before steam generator tube degradation

[195] *Id*. (citing Initial Decision, 136 FERC ¶ 63,015 at P 145).

[196] Arkansas Commission Brief on Exceptions at 5.

[197] *Id*. at 6.

mechanisms become evident precludes the use of relatively short operating history for the replacement Alloy 690 tubing material for ANO-1 and ANO-2 to predict its ultimate life.[198]

102. The Arkansas Commission states that this evidence establishes that, in Entergy witness Mitchell's expert opinion, there are many engineering reasons why the replacement steam generators for ANO-1 may need to be replaced in the future. To conclude otherwise is in error. The Arkansas Commission states that the Presiding Judge relies solely on a manufacturer's warranty to conclude that it is unreasonable to expect that it will need to be replaced a second time over the remaining NRC license life of ANO-1 (ending in 2034) but this logic is flawed. The Arkansas Commission states that Entergy witness Mitchell's engineering judgment and opinion that it is not possible to determine whether the steam generators for ANO-1 will be replaced is uncontested. The Arkansas Commission states that a conclusion on the timing of future replacement of steam generators for the Arkansas Nuclear One units is an engineering judgment, pure and simple and does *not* involve a question of law or warranty coverage.[199]

103. The Arkansas Commission states that there is no engineering evidence in this record to override Entergy witness Mitchell's opinion, which the Presiding Judge found to be credible and reliable.[200] Also, the Arkansas Commission states that the Presiding Judge rightly relies on the conclusions of Freier, a member of the Arkansas Commission Staff, that "the [ANO-2][steam generators] may have to be replaced before their NRC license expiration [in 2038]…."[201] The Presiding Judge additionally concluded "Freier's conclusions as to the replacement of the [ANO-2] steam generator are supported by engineering evidence in this case, and I find that she exercised informed judgment in considering interim replacements of both [ANO-1] and [ANO-2] steam generators."[202] The Arkansas Commission states that, nevertheless, the Presiding Judge concluded that "Freier's conclusion that the ANO-1 steam generators would have to be replaced prior to

[198] *Id*. at 6-7.

[199] *Id*. at 8.

[200] *Id*.

[201] *Id*. (citing Initial Decision, 136 FERC ¶ 63,015 at P 149).

[202] *Id*. (citing Initial Decision, 136 FERC ¶ 63,015 at P 154).

the expiration of its NRC license was incorrect, but this is not because she failed to exercise informed judgment."[203]

104. The Arkansas Commission states that the essence of a depreciation study is to provide the best expert judgment for a projection or estimate of future events.[204] The Arkansas Commission states that General Instruction No. 22 requires that, for depreciation rate purposes, "*[e]stimated* useful service lives of depreciable property must be supported by engineering, economic, or other depreciation studies."[205]

105. The Arkansas Commission states that depreciation studies are all about forward-looking estimates of service lives, including the effects of interim retirements.[206] To the extent estimates prove to be in error in hindsight, they are to be corrected down the road in the next study. To that extent, they are self-correcting, by their very nature. For example, the Arkansas Commission states that Entergy witness Caldwell testified that Entergy Arkansas's customers would not be harmed if Freier's assumption used in her study is eventually found to be incorrect and the replacement steam generators continue to operate until the expiration of the existing license expiration dates. The Arkansas Commission states that this is because the recorded depreciation expense directly reduces the unrecovered service value and rate base, which are recoverable in the future from customers. The Arkansas Commission states that the estimates of Entergy witness Mitchell and Freier are controlling over the so-called warranty of Framatome for ANO-1.[207]

106. In contrast, in its brief on exceptions, the Louisiana Commission states that the Presiding Judge erred in approving an average service life for ANO-2 that reflected an assumption that the steam generators at the unit will have to be replaced a second time before the end of the unit's license life, based solely on the finding that there is *no certainty* the steam generators will not be replaced. The Louisiana Commission states that the applicable criterion under accepted depreciation practices is not certainty, but probability.[208] The Louisiana Commission states that the Presiding Judge failed to

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[203] *Id*.

[204] *Id*. at 9.

[205] *Id.* at 8 (citing 18 C.F.R. Pt. 101, General Instructions, No. 22).

[206] *Id*.

[207] *Id*. at 9-10.

[208] Louisiana Commission Brief on Exceptions at 9.

consider the unrefuted evidence that it is improbable the steam generators will have to be replaced a second time during the license life.[209] The Louisiana Commission states that this evidence included: (a) evidence that the steam generators were designed to last longer than the license life; (b) evidence that improvements to tubing in the steam generators make life-ending corrosion unlikely; and (c) evidence that there have been fewer problems in steam generators with comparable tubing.[210]

107. The Louisiana Commission states that the Presiding Judge correctly found that the Freier Study should not have assumed that the steam generators at ANO-1 will be replaced a second time, but incorrectly approved the assumption of a second replacement for ANO-2. In the case of ANO-1, the Louisiana Commission states that the replacement steam generators need only to last 29 years to reach the end of the license life. The ANO-2 steam generators, also improved, need to last only 38 years to reach the end of the license and were designed to last 40 years.[211] The Louisiana Commission states that the Presiding Judge ruled that the depreciation study correctly assumed they will be replaced again, based on a finding that there is no "certainty it will not happen again."[212] The Louisiana Commission states that that standard is incorrect; the correct depreciation principle examines probabilities. The Louisiana Commission states that both Louisiana Commission witnesses King and Kollen testified, and supplied authority, establishing this principle, in particular, the NARUC Depreciation Manual.[213]

108. The Louisiana Commission states that the evidence overwhelmingly established that the ANO-2 steam generators are not likely to be replaced a second time. The Louisiana Commission states that it presented firsthand evidence, industry data, and Entergy admissions establishing that the steam generators are unlikely to be replaced, and the Presiding Judge makes no findings to the contrary. Therefore, the Louisiana Commission states that the ruling should be reversed.[214] The Louisiana Commission states that the evidence presented by the Louisiana Commission, based on Entergy's own testimony in Arkansas Commission proceedings, established that the steam generator

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[209] *Id*. at 9-10.

[210] *Id*. at 10.

[211] *Id*. at 21.

[212] *Id*. at 22 (citing Initial Decision, 136 FERC ¶ 63,015 at P 152).

[213] *Id*. at 24.

[214] *Id*. at 27.

replacements were caused by unexpected corrosion problems in the tubing in which water from the reactor passes through the steam generator, after which it returns to the reactors.[215] The Louisiana Commission states that the original steam generator tubes were made with a metallurgic alloy named Alloy 600 that "proved to be less resistant to corrosion than was thought when the steam generators were designed."[216]

109. The Louisiana Commission states that Entergy's argument that there is no "certainty that the replacement steam generators will not be retired prior to the expiration of the current operating licenses of either unit"[217] is not relevant. The Louisiana Commission states that Entergy did not provide any authoritative basis for asserting that the standard should be a "certainty."[218] The Louisiana Commission states that the "certainty" standard is not the appropriate basis on which to resolve this depreciation issue. The Louisiana Commission states that, although Entergy employed the standard without support, no witness testified that "certainty" is the appropriate basis to predict interim retirements.[219] The Louisiana Commission states that as its witness King indicated, the appropriate standard is whether the steam generator replacements are "likely to be repeated."[220]

110. Further, the Louisiana Commission states that the evidence established that the design lives for the Alloy 690 steam generators are each 40 years.[221] The Louisiana Commission states that the design lives exceed the current lives of each of the units. The designs for the steam generators took into account and accommodated "all potential known difficulties" and were intended "to achieve at least that life," as Entergy witness Mitchell conceded.[222] The Louisiana Commission states that Mitchell agreed, "Entergy believed that the replacement steam generators were designed to last 40 years based on

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[215] *Id*. (citing Ex. LC-12 at 23-24).

[216] *Id*. (citing Ex. LC-12 at 7).

[217] *Id*. at 29 (citing Ex. EAI-9 at 27).

[218] *Id*.

[219] *Id*.

[220] *Id*. (citing Ex. LC-24 at 17).

[221] *Id*. at 30 (citing Ex. LC-20; Tr. 41-43).

[222] *Id*. (citing Tr. 48).

what was known when they were delivered…."[223] Further, the Louisiana Commission states that Mitchell has never been involved in a discussion with Entergy, nor seen a document, suggesting the replacement steam generators might fail.[224]

111. The Louisiana Commission states that, absent evidence to support a finding of probability related to the ANO-2 steam generator replacement, the Presiding Judge retreated to relying on the "informed judgment" of Freier, who never appeared before him. The Louisiana Commission states that no basis exists to determine she exercised "informed judgment" on the steam generator issue. The Louisiana Commission states that Freier refused, in her discovery deposition, to agree that the governing depreciation principle should be applied.[225] Also, she was not even aware of the relative size of the steam generator replacements.[226] The Louisiana Commission states that she was in no position to exercise "informed judgment"[227] and the evidence overwhelmingly establishes that recurring steam generator replacements should not have been assumed into the average service life calculation for either Arkansas Nuclear One unit. Therefore, the Louisiana Commission states that the Initial Decision should be overruled with respect to ANO-2.

3. Briefs Opposing Exceptions

112. In its brief opposing exceptions, Entergy states that the Presiding Judge correctly found that the retired ANO-2 steam generators should be included in the ANO-2 retirement study. Entergy states that the depreciation rates filed by Entergy Arkansas in this proceeding for ANO-1 and ANO-2 were calculated using a number of assumptions, including what is called an "interim retirement curve." Entergy states that the curve is based on a retirement history for each unit, which includes equipment that is retired before the end of the service lives of the units. Entergy states that it is the inclusion of the retired steam generators in the retirement history, and thus in the interim retirement curves, that was at issue at the hearing.

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[223] *Id*. at 31 (citing Tr. 50-51).

[224] *Id*. (citing Tr. 52-54).

[225] *Id*. at 32 (citing Ex. ESI-12).

[226] *Id*. (citing Ex. ESI-12).

[227] *Id*.

113. Entergy states that it was the only party to submit expert engineering testimony regarding the likelihood that the ANO-1 and ANO-2 steam generators would need to be replaced again. Entergy states its witness Mitchell testified that, although Alloy 690 is more resistant to stress corrosion cracking than Alloy 600, Alloy 690 is softer than Alloy 600, the tubes are thinner, and therefore, are more prone to damage from wear, which is already being experienced at ANO-1.[228] Entergy states that its witness Mitchell also testified that Alloy 690 is more prone to tube scaling, which leads to under-deposit corrosion.[229] Mitchell further testified that the operating history of steam generators using Alloy 690 is too limited to be able to reach a conclusion as to the likely lives of those steam generators.[230] Consequently, Entergy states that he concluded that it is not possible to determine at this point that the ANO-1 and ANO-2 steam generators are likely, or unlikely, to need to be replaced again before the end of the service lives of ANO-1 and ANO-2.

114. Entergy states that the Louisiana Commission did not present any testimony from a witness with expertise in engineering issues related to nuclear facilities. Instead, Entergy states that the Louisiana Commission submitted testimony by two accountants and an economist. Entergy states that the Presiding Judge evaluated the Louisiana Commission's testimony and concluded that the Louisiana Commission has no ability in this case to make engineering assessments.[231] Entergy states that the Presiding Judge noted that Entergy witness Mitchell, the only qualified engineering expert to testify on the steam generator replacement issue, "testified that he does not have enough data on the characteristics of Alloy 690 to opine on whether the new [steam generators] will last to their 40-year design life."[232] Consequently, Entergy states that the Presiding Judge found that the decision to include the steam generator retirements at ANO-2 in the retirement history for that unit was "supported by engineering evidence in this case," and therefore that decision was upheld as reasonable.[233]

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[228] Entergy Brief Opposing Exceptions at 29.

[229] *Id*. (citing Ex. EAI-23 at 13).

[230] *Id*. (citing Ex. EAI-23 at 15-16; Tr. at 51).

[231] *Id*. at 30 (citing Initial Decision, 136 FERC ¶ 63,015 at P 117).

[232] *Id*.

[233] *Id*. (citing Initial Decision, 136 FERC ¶ 63,015 at PP 154-55).

115. Entergy disagrees with the Louisiana Commission's arguments that the Louisiana Commission presented firsthand evidence, industry data, and Entergy admissions establishing that the steam generators are unlikely to be replaced. Entergy states that the Louisiana Commission is wrong as to what the record evidence demonstrates. Entergy states that, as its witness Mitchell testified, there is not enough experience with Alloy 690 to know whether tubes made with this alloy will fare better than the tubes used in the previous generations of steam generators. Entergy states that none of the evidence presented by the Louisiana Commission shows otherwise. Because the evidence does not show that it is unlikely that the current steam generators will need to be retired before the end of the ANO-2 service life, inclusion of the retired steam generators in the retirement history was appropriate for both ANO-1 and ANO-2.[234]

116. The Louisiana Commission asks that the Commission affirm the Initial Decision's holding that removed the steam generator replacements at ANO-1 from the historic retirement data in estimating the service life of that unit. It states that Entergy only attempted to prove that there is no certainty that the steam generators will not have to be replaced again. However, the Louisiana Commission states that this is not the applicable standard. The Louisiana Commission states that the correct standard requires examining the likelihood of replacement and Entergy's expert did not address that issue.[235] Moreover, the Louisiana Commission states that Entergy's own expert testimony from retail proceedings establishes that a second steam generator replacement is unlikely, as does the industry data regarding the Alloy 690 steam generator fleet.

117. The Louisiana Commission states that although Entergy did concede that the correct depreciation standard calls for analyzing the likelihood of a second steam generator replacement, this was not the standard Entergy advocated and addressed at the hearing. Nevertheless, the Louisiana Commission states that Entergy still relies on its "certainty" evidence.[236] The Louisiana Commission states that Entergy did not present engineering testimony addressing the correct standard, so the engineering testimony cannot be deemed probative on the depreciation issue. The Louisiana Commission states that the evidence on the likelihood of a second replacement fully supports the Presiding Judge's ruling regarding ANO-1.[237]

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[234] *Id*. at 31.

[235] Louisiana Commission Brief Opposing Exceptions at 1.

[236] *Id*. at 4.

[237] *Id*.

118. The Louisiana Commission states that Entergy witness Mitchell testified that "it is not possible today to state with certainty whether the steam generators will or will not require replacement again."[238] The Louisiana Commission states that Entergy witness Mitchell never offered an opinion as to whether it is likely the steam generators will have to be replaced a second time.[239] It argues that although Entergy witness Mitchell may have been the only qualified nuclear engineer to provide testimony, his "no certainty" testimony did not require expertise. According to the Louisiana Commission, Entergy witness Mitchell conceded at the hearing that he could not say with "certainty" that any part of the plant will last until the end of unit's license life.[240] The Louisiana Commission contends that Entergy had the burden of proof in this proceeding and presenting testimony that offers no opinion on the relevant issue is not sufficient to carry that burden.[241]

119. Further, the Louisiana Commission states that it presented a great deal of evidence indicating that the steam generators at both ANO-1 and ANO-2 will last through the license terms.[242] The Louisiana Commission states that the improvement in performance of Alloy 690 steam generators is readily apparent in reviewing Exhibit LC-52, which provides data on issues in Alloy 690 tubing versus earlier technology.[243] The Louisiana Commission also states that Entergy's arguments that the warranty terms should be discounted because the Louisiana Commission's witness who authenticated the contract was not a nuclear expert are specious. The Louisiana Commission states that nuclear expertise is not necessary to read a warranty provision.[244] Regardless, the Louisiana Commission states the warranty shows the manufacturer's extremely high confidence that the steam generators will last through the warranty term.[245] Further, the Louisiana Commission disagrees with the Arkansas Commission's argument that the design life of

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[238] *Id*. at 5 (citing Ex. EAI-23 at 9).

[239] *Id*. at 6.

[240] *Id*. (citing Tr. at 27-28).

[241] *Id*.

[242] *Id*. at 7.

[243] *Id*.

[244] *Id*. at 8.

[245] *Id*. at 9.

the steam generators should not determine the depreciation life. The Louisiana Commission states that the Commission should recognize that the design life establishes the minimum likelihood of the life of the steam generators.[246]

120. The Louisiana Commission states that Entergy has the burden of proof in this case but its evidence only establishes, at most, that an expert cannot be certain of the lives of the steam generators, just as he cannot be certain of any other future event.[247] The Louisiana Commission states that this conclusion is not proof of anything and does not even address the applicable depreciation standard. The Louisiana Commission states that it is highly unlikely that the steam generators will require a second replacement during the license term, so the Initial Decision respecting ANO-1 should be affirmed.[248]

121. Entergy argues that the Presiding Judge erroneously held that the ANO-1 steam generators should not be included in the interim retirement history. Entergy states that the Louisiana Commission failed to present any testimony from a witness with expertise in engineering; rather, the Louisiana Commission submitted testimony by two accountants and an economist. Entergy states that the Presiding Judge supported Entergy's position that the Louisiana Commission did not submit a sufficient engineering assessment.[249]

122. Entergy states that the issue of the steam generators must be decided based on a proper application of the correct accounting standard that a replacement is "not likely to recur."[250] Entergy points out the Louisiana Commission's reliance on the following language in the NARUC Depreciation Manual as support for its position that the appropriate standard for steam generator replacement is "likely to be repeated"[251]:

> For example, if the analyst discovers that corrosive material used in equipment was used in a certain past period and noncorrosive improved material which last much longer is predominantly used

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[246] *Id*. at 10.

[247] *Id*.

[248] *Id*.

[249] Entergy Brief Opposing Exceptions at 30.

[250] *Id.* at 32.

[251] *Id*. (citing Ex. LC-64 at 14).

> now, the analyst should discount the period in which corrosive material was used as not-being representative of future activity.[252]

Entergy states that although it does not disagree with this as a general rule; it does not apply here given the facts of the proceeding. Entergy notes that: (1) Alloy 690 is subject to a particular type of corrosion (under-deposit corrosion from scaling) and therefore is not noncorrosive;[253] (2) corrosion is not the only type of failure to which Alloy 690 is subject; and (3) given the short history of use of Alloy 690 in the nuclear industry it is not possible to determine at this date based on the limited operating history of steam generators using Alloy 690 whether the Alloy 690 tubing will last longer. Thus, the NARUC rule language does not apply here in this case.[254] According to Entergy, two different types of evidence were presented at the hearing on the steam generator replacement issue: (1) evidence regarding the appropriate accounting standard applicable to the determination of whether to include the retired steam generators in the retirement histories for ANO-1 and ANO-2; and (2) expert engineering testimony regarding the likelihood that the replacement steam generators would themselves need to be replaced before the end of the service lives for ANO-1 and ANO-2.[255]

123. The Arkansas Commission argues that the Presiding Judge's inclusion of the steam generator replacements in the interim retirement histories for ANO-2, but not for ANO-1, based on differences in the duration of the warranties provided by the constructors of the steam generators, is in error. The Arkansas Commission states that there is insufficient evidence to conclude that the steam generator for ANO-1 will not need to be replaced within its remaining NRC license.[256]

124. The Arkansas Commission argues that the Presiding Judge's reliance on a comparatively longer warranty given by Framatome for the ANO-1 replacement steam generator to conclude that it is unreasonable to expect that it will need to be replaced a second time over the NRC license life of the ANO-1 is based on flawed logic.[257] First,

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[252] *Id.* (citing Louisiana Commission Brief on Exceptions at 30).

[253] *Id.* (citing Ex. EAI-23 at 13).

[254] *Id*.

[255] *Id*. at 5.

[256] Arkansas Commission Brief Opposing Exceptions at 10.

[257] *Id*. at 12.

the Arkansas Commission argues that the warranty was given before the steam generators were replaced by Framatome for ANO-1 in 2005 and Framatome's 30-year warranty cannot take into account any post-2005 events such as experience with the steam generators Alloy 690 tubing replacement.[258] Second, the Arkansas Commission argues that the design life underlying the warranty is not determinative, since a design life of a unit does not preclude the possibility that the steam generators will need replacements before that life is ended. It states that the warranty does not protect Entergy Arkansas from all replacement costs as the warranty does not cover all circumstances requiring steam generator replacement.[259] Third, the Arkansas Commission argues that testimony by Entergy witness Mitchell that it is not possible to determine whether the steam generator for ANO-1 will be replaced is uncontested and the timing of future replacement of steam generators for the ANO units is an engineering judgment and does not involve a question of law, contracts, or warranty coverage.[260]

125. Fourth, the Arkansas Commission argues that depreciation studies are all forward-looking estimates of service lives, including the effects of interim retirements. To the extent these estimates prove to be in error in hindsight, they are to be corrected down the road in the next study. To that extent, depreciation studies by their nature are self-correcting.[261] The Arkansas Commission argues that this is because the recorded depreciation expense directly reduces the unrecovered service value and rate base, which are recoverable from future customers. Thus, argues the Arkansas Commission, estimates of Entergy witness Mitchell and other witnesses are by their nature projections or estimates of a future event, and if incorrect, will be corrected in the future. The Arkansas Commission contends that expert opinions and projections should be controlling over warranties provided by Framatome for ANO-1.[262]

4. Commission Determination

126. We affirm the Presiding Judge's decision to include the steam generator replacements in the interim retirement histories for ANO-2, but not for ANO-1.

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[258] *Id*.

[259] *Id*.

[260] *Id*. at 13.

[261] *Id*. at 13-14.

[262] *Id*. at 14.

127. In making his determination, the Presiding Judge considered and applied the guidelines from the NARUC Depreciation Manual as to whether the steam generator replacements are likely to be recurring events.[263] The NARUC Depreciation Manual,[264] which sets forth the guidelines for including an event in an interim retirement history, states that historical data used to forecast future retirements should not contain events that are either anomalous or unlikely to recur.

128. Upon considering the historical evidence, the Presiding Judge noted that in 2000, ANO-2 had run for 20 years prior to replacement of the steam generators. ANO-1 had run for 31 years prior to its replacement in 2005. The new steam generators were replaced with the new Alloy 690, the state of the art metal used in the industry to date. The Presiding Judge considered the strengths and weaknesses of the new Alloy 690, compared to the original material, Alloy 600. We agree with the Presiding Judge that the evidence suggests that there are problems with the new alloy.[265] As the Presiding Judge noted, while Alloy 690 is more resistant to stress corrosion cracking, it is softer than Alloy 600 and therefore is more prone to denting and abrasion wear damage.[266] It has not been shown, as argued by the Louisiana Commission, that the new Alloy 690 will result in significant improvement of performance. The evidence on this issue has shown that it is difficult to forecast with any certainty how the new alloy will perform. As Entergy witness Mitchell testified, the operation of steam generators is a very complex proposition, involving consideration of chemistry, temperature, vibration, heat up and cool down cycles, and flow rates.[267] Mitchell stated that it is far too simplistic to suggest that a new alloy will solve the problems experienced with the steam generators.[268] Therefore, Mitchell stated that a lifetime projection for any of the ANO steam generators is not possible today and it is not possible to know how long the steam generator replacements would last.[269]

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[263] Initial Decision, 136 FERC ¶ 63,015 at P 151.

[264] Submitted as Ex. LC-3.

[265] *Id*. P 142.

[266] *Id*.

[267] EAI-23 at 13.

[268] *See id*.

[269] *Id*. at 16.

129. Based on these factors and operational and design differences between ANO-1 and ANO-2,[270] the Presiding Judge found, and we agree, that one might reasonably expect that with the use of the improved Alloy 690 tubing, ANO-1 and 2 steam generators could last at least as long as the original generators at each unit, but not necessarily longer, all other usage factors being equal (which the Presiding Judge noted is not the case with the ANO-2 generators, since they have been uprated, potentially reducing their service life to less than the life of the original generators). Thus, the Presiding Judge reasonably found that the ANO-2 steam generators may have to be replaced before ANO-2's NRC license expiration in 2038, (i.e., they may not last the total of 38 years necessary to last to the end of the NRC license), but that the ANO-1 steam generators should last to the expiration of ANO-1's NRC license in 2034 (i.e., they will last the total of 29 years necessary to last to the end of the NRC license).

130. Entergy and the Arkansas Commission argue that the Presiding Judge should have found, based on Entergy witness Mitchell's testimony regarding the lack of information available on the new Alloy 690, that the steam generator replacements should be included in the interim retirement histories for both units. Entergy and the Arkansas Commission have not persuaded us that the Presiding Judge's reliance on the differentiation of the units based on operation and design differences was in error. As we noted above, ANO-1 and ANO-2 have design and operational differences that justify different treatment for depreciation purposes. While the Presiding Judge found that the steam generators for ANO-1 and ANO-2 could last as long as the original units,[271] he considered the fact that ANO-2 was uprated by 7.5 percent in 2002 and therefore operates at higher temperatures that contribute to greater stress corrosion.[272] This is a significant operational difference from ANO-1 which may require that the ANO-2 steam generators be replaced prior to the

[270] As noted by the Presiding Judge, there are significant differences between ANO-1 and ANO-2 that justify disparate treatment between the units for depreciation purposes. For example, ANO-1 and ANO-2 are designed differently; ANO-1 is a "once-through steam generator," while ANO-2 is a "recirculating steam generator." Once-through units have 15,000 steam tubes, while recirculating units have only 10,000. Further, recirculating steam generators produce saturated steam, while once-through steam generators produce steam that is heated beyond the saturation point. The Presiding Judge also noted that recirculating steam generators such as ANO-2 also operate at higher temperatures than do once-through steam generators. Initial Decision, 136 FERC ¶ 63,015 at P 141.

[271] Initial Decision, 136 FERC ¶ 63,015 at P 145.

[272] *Id*. P 143.

expiration of its NRC license in 2038. While it may not be possible to say with certainty whether the steam generators will be required to be replaced again, the evidence suggests that ANO-1 should last the remainder of its NRC license life. The evidence also suggests that because ANO-2 is subjected to higher temperatures and extensive wear, it is probable that its steam generators will need to be replaced prior to the expiration of the NRC license-life. Given these design and operating differences between ANO-1 and ANO-2, and the fact that the operating history of generators using Alloy 690 is too limited to determine whether use of that alloy will result in a significant change in performance of the new generators compared to their predecessors, the Presiding Judge reasonably relied on the interim retirement history of the original ANO-1 steam generators to forecast future retirements of their replacements.

131. We also disagree with the Arkansas Commission that the Presiding Judge relied on the warranty as a determinative factor in deciding that the ANO-1 steam generators will need to replaced a second time. As we state above, the Presiding Judge applied the guidelines provided in the NARUC Depreciation Manual for determing whether the replacement of the steam generators would likely be a recurring event. In the absence of operating data available about Alloy 690, the Presiding Judge considered the totality of both historical data and other factors, i.e., the age of the existing steam generators, the lifespan of the original steam generators, the remaining NRC license lives of the units, and the design and operational characteristics of the units. While he relied on the warranty to corroborate his conclusions reached on the other factors, we disagree that the warranty was a determinative factor in his decision, and it is not in ours.

D. The Inclusion of Dismantlement Costs in the Depreciation Rates

1. Initial Decision

132. The Presiding Judge concluded that Entergy carried its burden of demonstrating that the inclusion of dismantlement costs for Entergy Arkansas steam production units,[273] in the depreciation rates was just and reasonable.[274] The Presiding Judge rejected arguments made by the Louisiana Commission that the proposed dismantlement costs are unsupported and therefore unreasonable. He also rejected an argument by the Louisiana

[273] Specifically, those steam production units are: Couch Unit 1, Couch Unit 2, Lake Catherine Unit 1, Lake Catherine Unit 2, Lake Catherine Unit 3, Lake Catherine Unit 4, Ritchie Unit 1, Lynch Unit 1, Lynch Unit 2, Lynch Unit 3, Moses Unit 1, Moses Unit 2, Independence Unit 1, White Bluff Unit 1, and White Bluff Unit 2. Ex. EAI-17 at 1.

[274] Initial Decision, 136 FERC ¶ 63,015 at P 165.

Commission that the proposed decommissioning costs should be rejected because Entergy Arkansas has not demonstrated an intent to dismantle steam generating plants.

133. With regard to whether Entergy's proposed dismantlement costs are supported, the Presiding Judge considered the three units cited by the Louisiana Commission in support of its argument that the dismantlement costs are unreasonable. The Presiding Judge compared a Deloitte & Touche study, relied on by the Louisiana Commission in its 1998 rate proceeding which surveyed 23 other utilities in order to estimate Entergy Gulf States Louisiana's dismantlement costs with the 2008 Spanos study, which included Freier's dismantlement estimates based on the EEI/AGA Study. The Presiding Judge found that the plant dismantlement costs approved by the Louisiana Commission in 1998 track well with Freier's estimates in this case. In contrast, the Presiding Judge found that the Louisiana Commission "cherry-picked" three particular units to formulate its dismantlement proposal. The Presiding Judge found that Entergy's proposed decommissioning costs are within a zone of reasonableness.[275] The Louisiana Commission's alternative proposal, advocated by its witness King, and rejected by the Presiding Judge, is to use SFAS No. 143 (Accounting for Asset Retirement Obligations),[276] promulgated by the Financial Accounting Standards Board to calculate dismantlement costs. The SFAS No. 143 methodology is used to calculate a present value of future obligation each year. The Presiding Judge found that the Commission has never required a utility to use SFAS No. 143 for steam plant decommissioning, and it has been used in the utility industry only to calculate Asset Retirement Obligations for environmentally-required retirements, such as nuclear power plants and asbestos removal. The Presiding Judge found that since there is no precedent for requiring the use of SFAS No. 143 in calculating electric generation plant decommissioning costs, he would not require it in this case.[277]

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[275] *Id.*

[276] SFAS No. 143 governs legal obligations associated with the future retirement of long-lived assets. These obligations, generally referred to as Asset Retirement Obligations, are legal obligations associated with the retirement of a tangible long-lived asset that an entity is required to settle as a result of an existing enacted law, statute, ordinance, or written or oral contract or by legal construction of a contract under the doctrine of promissory estoppel. *See* Financial Accounting Standards Statement No. 143, Accounting for Asset Retirement Obligations, issued June 2001. The accounting publication may be obtained from FASB at http://www.fasb.org/. Appendix A at A2-A5.

[277] Initial Decision, 136 FERC ¶ 63,015 at P 157.

134. The Presiding Judge also considered the testimony of Staff witness Pewterbaugh regarding whether the decommissioning costs were supported and should be included in the depreciation rates. Specifically, the Presiding Judge considered the necessity of site-specific studies, as was included in the EEI/AGA Study. The Presiding Judge stated that Staff witness Pewterbaugh acknowledged that the Commission has never required site-specific studies in an electric case. Since the Presiding Judge found that it is not Commission practice, he found that a site-specific study is not necessary to support the decommissioning costs in this case.[278]

135. With regard to whether there is actual intent to dismantle steam generating plants, the Presiding Judge states that Entergy admitted in response to a data request from the Louisiana Commission in this proceeding that it has no present plans to remove equipment from the Entergy Arkansas plants that already have been retired. However, the Presiding Judge found that this has no bearing on whether Entergy Arkansas at some time will dismantle its generation plants when they are retired.[279] The Presiding Judge noted that generational inequity would result if at the time of dismantlement, Entergy Arkansas would not have collected the required funds, but instead would have to charge the customers at the time of dismantlement for all of the costs.[280] The Presiding Judge found that the Louisiana Commission's concern that Entergy Arkansas will collect dismantlement funds and never use them is speculative.[281]

2. Briefs on Exceptions

136. The Louisiana Commission states that the Initial Decision erred in approving a decommissioning and terminal salvage allowance based on a purported study that was not performed by a witness in this case, contained anomalous data, and was apparently based on other studies performed by persons who were not identified, about two decades ago.[282]

137. The Louisiana Commission states that Entergy provided no acceptable proof to support the net salvage allowances included in the Entergy Arkansas depreciation study. The Louisiana Commission states that Freier made no analysis of her own to support the

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[278] *Id*. P 159.

[279] *Id*. P 164.

[280] *Id*. P 156.

[281] *Id*.

[282] Louisiana Commission Brief on Exceptions at 10.

net salvage factors, but relied on Spanos, who did not appear in this case to support his analysis or conclusions.[283] Also, the Louisiana Commission states that Spanos' analysis was based on a 1992 "report" performed by an individual, not a government agency or trade association, and that individual did not appear as a witness.[284] Thus, the Louisiana Commission states that the net salvage allowances are completely without foundation and the Initial Decision erred in accepting them.[285]

138. The Louisiana Commission states that in the 1990s, an individual at Deloitte & Touche compiled "estimates" prepared by unknown sources; a second individual (Spanos) supposedly relied on that information to prepare a regression and apply it to Entergy Arkansas' plants. The Louisiana Commission states that was then adopted by a third individual (Freier) from the Arkansas Commission staff without any scrutiny of the underlying information. The Louisiana Commission states that Freier's adoption of the results is now supported here by Entergy witness Caldwell, who did not participate in any of this activity. The Louisiana Commission states that its witness King was the only witness who attempted to analyze this data and he testified that he could not verify the data.[286]

139. The Louisiana Commission states that the Entergy Arkansas net salvage allowances are unacceptable because they conflict with actual experience. The Louisiana Commission states that the Entergy Arkansas study incorporates allowances of about $30-$40 per kilowatt of capacity.[287] But Entergy Arkansas' actual experience is far different, the Louisiana Commission argues because Entergy Arkansas dismantled the 34,500 kilowatt unit known as "Jim Hill" for $70,000 or about $2 per kilowatt. The Louisiana Commission states that, in addition, Entergy Gulf States, from 2000-2003, dismantled the Neches generation station (454 MW) for about $10-$12 per kilowatt.[288] The Louisiana Commission states that this figure does not reflect positive salvage, which would lower the net cost.[289] The Louisiana Commission states that these two

[283] *Id*. at 53.

[284] *Id*. at 53-54.

[285] *Id*.

[286] *Id*. at 56-57 (citing Tr. at 438).

[287] *Id*. at 57 (citing Tr. at 297; Ex. LC-75).

[288] *Id*. (citing Tr. at 302-05; Ex. LC-75).

[289] *Id*. (citing Ex. LC-75 at 2).

dismantlements reflect Entergy's only actual experiences with dismantlement. The Louisiana Commission states that an amount in the $2-$10 per kilowatt range would be the maximum experience-based cost that could be supported on the record.[290]

140. The Louisiana Commission further disagrees with the Presiding Judge that it "cherry-picked" the Jim Hill, Neches and Patterson units to formulate its alternate proposal. The Louisiana Commission states that this finding conflicts with the record, because Jim Hill and Neches were the only units Entergy has dismantled in the past two decades, and Patterson is the only unit for which there was a site-specific estimate.[291] The Louisiana Commission states that the actual experience has got to be better evidence than a 20-year old study of non-comparable plants.[292]

141. The Louisiana Commission further states that the Initial Decision improperly relied on the 1992 Deloitte & Touche study to determine a salvage allowance for Entergy Arkansas. The Louisiana Commission states that that study is nearly 20 years old and there was no showing that the units involved in the study are comparable to those of Entergy Arkansas. The Louisiana Commission states there was no showing as to how the study was performed and no witness could answer questions related to these and other crucial issues concerning the applicability of the study to Entergy Arkansas' plants.[293] Further, the Louisiana Commission states that the Presiding Judge relied on the results of a 1998 decision for Entergy Gulf States, Inc. to establish the reasonableness of Entergy Arkansas' estimates. The Louisiana Commission counters that those results are not relevant to establish a basis for the results Entergy seeks in this case.[294]

142. The Louisiana Commission argues that any dismantlement allowance would be especially unreasonable in Entergy's case. The Louisiana Commission reiterates its arguments that Entergy has no plans to dismantle any plants.[295] The Louisiana

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[290] *Id*. at 57.

[291] *Id*. (citing Ex. LC-75; Ex. LC-77).

[292] *Id*.

[293] *Id*. at 58.

[294] *Id*.

[295] *Id*.

Commission states it would be unreasonable to require ratepayers to advance costs for a dismantlement that may never happen, at least in their lifetimes.[296]

143. Staff argues that Entergy's estimate for decommissioning costs is not supported and recommends that Entergy be required to file a detailed decommissioning study to support these costs in another rate case. Staff states that it recognizes that Entergy Arkansas will incur decommissioning costs and, accordingly, should be able to include them in depreciation rates if they are supported. However, in this case, Staff states that Entergy Arkansas' estimate for decommissioning costs is not supported and, accordingly, should be removed from the calculation of depreciation rates in this proceeding. Staff states that the Presiding Judge disagreed with Staff and simply found that a site-specific study is not necessary to support the decommissioning costs in this case because it is not Commission practice. Staff states that the Presiding Judge relied upon Staff witness Pewterbaugh's acknowledgment that the Commission has never required site-specific studies in an electric case and his characterization of this concept as a "frontier area." However, Staff states that the concept of a "frontier area" includes acknowledging that the Commission has not ruled one way or the other. Further, while Staff recognizes that there is no specific Commission ruling that requires a site-specific study in an electric case (or that does not require one), such recognition does not foreclose whether site-specific dismantlement costs should provide the minimum support in rate filings and whether Entergy Arkansas met such a level through its studies. Indeed, Staff states that Entergy's own witness, Mr. Caldwell, admitted that "400 or so site-specific dismantlement studies" had occurred.[297] Staff states that these 400 occurrences demonstrate that, far from being a novel idea, utilities view such a practice as being an entirely appropriate method for the calculation of dismantlement costs.[298]

144. Staff also states that the Presiding Judge errs in relying upon Entergy's argument that its estimate for decommissioning costs is supported. Staff states that Entergy's estimate is based on the EEI/AGA Study as reviewed by Arkansas Commission staff member Freier. Staff states that the Presiding Judge referred to Spanos' use of the "EEI/AGA figures in developing new cost estimates for dismantling some of the EAI units"[299] but Staff states that the Presiding Judge did not acknowledge record evidence that shows that this study is not a good substitute for Staff's recommended site-specific

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[296] *Id*. at 58-59.

[297] Staff Brief on Exceptions at 11 (citing Tr. at 377-78).

[298] *Id*.

[299] *Id*. at 12 (citing Initial Decision, 136 FERC ¶ 63,015 at P 163).

study.[300] It is Staff's opinion that the EEI/AGA Study does not provide sufficient evidence to support inclusion of Entergy's estimate of decommissioning costs.[301] Staff also states that it is notable that Spanos and Freier are not witnesses in this proceeding and, thus, could not be questioned regarding the basis of their estimates. According to Staff, it is also telling that Freier's study, which adopted the dismantlement cost study provided by Spanos, does not discuss decommissioning costs but merely presents unsubstantiated percentages.[302]

145. Further, Staff states that neither Freier nor Spanos performed an independent analysis of the decommissioning costs, but merely relied upon the work of others, i.e., Freier relied upon Spanos who relied upon the EEI/AGA Study which was presented to EEI approximately 19 years ago by yet another expert who is not a witness in this proceeding.[303] Also, Staff states that the Entergy Arkansas study that was used in the development of Entergy Arkansas' estimate for decommissioning costs was based on decommissioning cost data for companies other than Entergy Arkansas.[304] Staff states that while this general approach is acceptable for interim retirements (which are smaller), for final abandonments, a detailed study of the specific requirements and processes involved for Entergy Arkansas' specific plants should be submitted in order to include decommissioning costs in depreciation rates. Thus, Staff states that the EEI/AGA Study cannot take the place of a site-specific study.[305]

146. Staff also states that the Presiding Judge appears to be under the mistaken impression that a depreciation study must include dismantlement costs, even if such costs are not supported. Staff states that while the Presiding Judge correctly refers to the Commission's Uniform System of Accounts, which allows dismantlement costs to be included in depreciation rates, he errs in his application of General Instruction No. 22A. Staff states that the Commission's regulations and General Instruction No. 22 clearly

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[300] *Id*.

[301] *Id*.

[302] *Id*. (citing Ex. S-3).

[303] Staff states that the EEI/AGA study was not expressly endorsed by EEI, but instead, was the viewpoint of its author, Mr. Ferguson of Deloitte & Touche, who presented it to the EEI and AGA in 1992. *Id.* at 13 (citing Ex. LC-72 at 2-3; Tr. at 287).

[304] *Id.* at 13 (citing Ex. S-7 at 7).

[305] *Id*.

support Staff's position that the estimate for decommissioning costs included in the calculation of Entergy Arkansas' proposed depreciation rates should be supported by a detailed study. Staff states that to assume that the Uniform System of Accounts allows dismantlement costs without detailed studies ignores the Commission's regulations and the Uniform System of Accounts, definitions and general instructions.[306]

147. Finally, Staff states that the Presiding Judge erred in relying upon selective comparisons as the basis for his determination that Entergy's proposed decommissioning costs are within a zone of reasonableness. Staff states that the Presiding Judge compares the decommissioning cost estimate (in $ per kW) approved by the Louisiana Commission for Entergy Gulf States thirteen years ago with Entergy Arkansas' estimate for decommissioning costs proposed in this proceeding (i.e., Spanos use of the EEI/AGA Study amounts). However, Staff states that the fact that a decommissioning cost estimate was approved by the Louisiana Commission at some point does not provide the specificity that is needed to support the proposed decommissioning costs in the instant proceeding.[307] Thus, Staff states that reliance upon a comparison with a stale 13 year old study is not sufficient to meet Entergy's section 205 burden to establish that its proposed dismantlement costs are just and reasonable.

3. Brief Opposing Exception

148. Entergy argues that the Depreciation Rates filed in this proceeding were based on service values that included dismantlement costs and these costs were derived from the dismantlement costs used to set Entergy Arkansas depreciation rates from various other studies and cost estimates, including: (1) the AGA/EEI Study, which studied over 400 site specific dismantlement costs based on site specific studies done prior to that time;[308] (2) the dismantlement cost estimate approved by the Louisiana Commission for Entergy Gulf States Inc. (Entergy Gulf States Study); and (3) the dismantlement cost estimate filed by Southern Company Services, Inc. on behalf of Gulf Power Company and accepted by the Commission (Gulf Power Study).[309] Entergy argues that the Louisiana Commission failed to present any evidence of its own as to the appropriate level of dismantlement costs in its testimony and did not submit any testimony that consisted of

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[306] *Id.* at 14.

[307] *Id.* at 15.

[308] Entergy Brief Opposing Exceptions at 43.

[309] *Id*. at 39.

any dismantlement cost studies of the Entergy Arkansas units.[310] Thus, Entergy argues, the burden of proof was therefore transferred to the Louisiana Commission and Staff going forward to prove that the evidence and studies submitted by Entergy were unjust and unreasonable, which both the Louisiana Commission and Staff failed to do.[311]

149. Entergy rebuts the Louisiana Commission's disagreement with the testimony of Entergy witness Caldwell, who presented evidence and additional studies to compare the underlying rates as proposed by Entergy. Entergy argues that the supporting data and underlying studies used to establish Entergy Arkansas' estimated Depreciation Rates were also validated against other studies, i.e., the decommissioning cost estimates in the Entergy Gulf States Study and the Gulf Power Study. Entergy states that its rates are reasonable and not excessive when compared to those other estimates. Entergy argues that the Louisiana Commission failed to submit any dismantlement cost studies of the Entergy Arkansas units at issue in this proceeding nor submit any studies of comparable units owned by other entities, such as the depreciation studies that Caldwell presented in his rebuttal testimony. Instead, the Louisiana Commission presents calculations and dismantlement cost data from three old plants that had been retired and dismantled in place over a number of years before being finally torn down. Entergy believes this data and calculations by the Louisiana Commission were invalid and properly were rejected by the Presiding Judge as being "cherry picked."

150. Entergy argues that the Commission should reject the contention made by Staff, and supported by the Louisiana Commission, that the Commission should require Entergy to file a site-specific cost study to support the dismantlement costs.[312] Entergy argues that there is no Commission requirement that a site-specific dismantlement cost study be submitted in order to meet the burden of proof that dismantlement costs will be incurred.[313] Entergy states that neither Staff nor the Louisiana Commission was able to cite to a single regulation, order, or other Commission precedent that supports such a contention. Furthermore, Entergy argues that Staff witness Pewterbaugh testified that he was not aware that his proposal represented a Commission practice, even at the Staff level. Entergy states that the dismantlement costs are adequately supported by substantial evidence and that the Louisiana Commission and Staff failed to meet their burden of

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[310] *Id*.

[311] *Id*. at 43.

[312] *Id.* at 44 (citing Staff Brief on Exceptions at 10-14; Louisiana Commission Brief on Exceptions at 54-55).

[313] *Id*. at 40.

proof going forward to demonstrate that the dismantlement costs included in Entergy Arkansas' depreciation rates are unreasonable.[314]

151. Entergy notes that Staff and the Louisiana Commission cite section 35.13(h)(10) of the Commission's regulations for the proposition that a utility filing for a proposed change in rates to its customers based in whole or in part on a change to its depreciation rates, must support that filing with a detailed depreciation study.[315] However, Entergy argues that this requirement applies only to the overall depreciation study that must be filed to support the changed depreciation rates. According to Entergy, nothing in the Commission's regulations requires the submittal of a detailed dismantlement study. Entergy concludes that there is an important policy reason to not require the submission of a detailed site-specific study as a prerequisite for the recovery of dismantlement costs in the calculation of depreciation rates.[316] Entergy argues that it would require a great deal of time and resources to require utilities to conduct site-specific dismantlement cost estimates, which can be expensive to prepare, and place smaller utilities at a disadvantage and also increase costs of utilities to complete these studies in order to meet their burden of proof for recovering dismantlement costs.[317]

152. Entergy contends that the dismantlement cost it presented meets the burden of proof set forth by the Commission. Entergy argues that, although there is no requirement in either the USoA or any Commission order specifying what type of evidence is required to support the inclusion of dismantlement costs, the requirement is to provide such evidence as will sustain the burden of proof. Entergy argues that it met this burden because it submitted substantial evidence in support of those costs. According to Entergy, this evidence included the following: (1) the original dismantlement cost estimate based on a 1992 dismantlement cost study of 400 site-specific studies of other utilities that was entered into the record; (2) testimony from Entergy witness Caldwell that the USoA requires dismantlement costs to be included in the calculation of a generation unit's service value; (3) testimony from Caldwell that the cost estimate is reasonable when compared to a dismantlement cost estimate for Entergy Gulf States approved by the Louisiana Commission; and (4) testimony from Caldwell that the cost estimate also is reasonable when compared to a recent dismantlement cost estimate prepared by Gulf Power Company. Entergy states that, based on this evidence, the

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[314] *Id*. (citing Ex. EAI-38).

[315] *Id*. (citing Staff Brief on Exceptions at 14).

[316] *Id*. at 41.

[317] *Id*.

Presiding Judge concluded that Entergy had met its burden of proof in order to include the dismantlement costs in the depreciation rate calculation.

153. Entergy states that it would be far more efficient to allow less detailed backup, such as a comparison to dismantlement cost estimates of other utilities, to satisfy the burden of proof. Entergy argues that Staff failed to support the position that while *interim retirements* do not require a full detailed site-specific cost study to determine the retirement costs, *final dismantlement* costs need to be supported by a full site-specific study. Entergy argues that Staff fails to support this position nor explain why the difference matters.[318] Staff argues that the cost of removal for interim retirement is less expensive than final dismantlement. Entergy witness Caldwell disagrees with Staff's conclusion by highlighting the interim retirements of the Arkansas Nuclear One steam generators, which costs are significantly higher than many of the final dismantlement cost estimates included in Entergy Arkansas's depreciation rates.[319]

154. Entergy argues that the dismantlement costs contained in the Entergy Gulf States Study present a reasonable comparison between Entergy's dismantlement costs and the dismantlement costs for Entergy Gulf States, Inc. According to Entergy, the Entergy Gulf States Study shows that when compared to the proposed dismantlement costs of Entergy Arkansas' oil and gas units, Entergy Gulf States' costs were approximately $4/kW higher than the dismantlement costs for Entergy Arkansas' oil and gas unit costs. Also, Entergy contends that the Entergy Gulf States Study found that the dismantlement costs for coal-fired units were approximately $4/kW lower than the dismantlement costs proposed by Entergy Arkansas coal-fired units.[320] Entergy argues that the comparison is relevant here for two reasons: (1) it shows dismantlement costs that have been determined to be appropriate by the Louisiana Commission based on adjustments recommended by one of its witnesses in this proceeding; and (2) it shows dismantlement costs for an affiliate of Entergy that is likely to incur similar dismantlement costs for a similar type of unit.

155. Entergy states that the Louisiana Commission's and Staff's remaining arguments that Entergy did not meet its burden of proof to support its dismantlement cost estimates should be rejected as a result of their failure to present any evidence in their answering testimony that the dismantlement costs are unreasonable.[321] Entergy states that the

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[318] *Id*.

[319] *Id*.

[320] *Id*. (citing Ex. EAI-9 at 45-46; Ex. EAI-18).

[321] *Id*. at 48.

Louisiana Commission and Staff failed to submit evidence or relevant comparisons to dismantlement costs claimed by other utilities and proffered no evidence regarding the specific units owned by Entergy Arkansas. Entergy argues that both the Louisiana Commission and Staff were given the opportunity to submit their own evidence designating the appropriate level of dismantlement costs, but failed to do so. Therefore, according to Entergy, the Presiding Judge's reliance on the AGA/EEI Study should be upheld. Entergy argues that the AGA/EEI Study showed the average dismantlement costs in 1992 dollars of $29/kW for oil and gas units and $39/kW for coal units compared to the dismantlement costs underlying the Entergy Arkansas depreciation rates which were $34.77/kW for oil and gas units and $35.01/kW for coal units in 2008 dollars.[322] Entergy also argues that the Entergy Gulf States Study calculated dismantlement costs as $137.67/kW for units under 400 MW and $43.33/kW for units above 400 MW.[323]

156. Entergy further states that there were fundamental flaws in the Louisiana Commission's calculations of the dismantlement costs and resulting rates.[324] Entergy argues that these flaws include: (1) the calculations were not supported by an expert in dismantlement cost calculations, but were made at the hearing by the Louisiana Commission counsel; (2) Entergy witness Caldwell's participation in the exercise was limited to checking the Louisiana Commission counsel's math and Caldwell was not asked to agree, nor did he agree, that the Louisiana Commission's calculations represented an appropriate way to determine dismantlement costs; (3) the calculations were based on dismantlement cost figures that did not purport to include all costs that are properly included in a dismantlement cost study to be used for depreciation purposes; (4) the cost figures were for the dismantlement of very old units that had been retired for a number of years and there was no evidence that the costs were in any way comparable to the costs of dismantling Entergy Arkansas' existing units and Louisiana Commission witness King testified later in the hearing that he had done no such analysis; (5) using dismantlement costs from facilities that had been dismantled over a number of years, while the dismantlement cost estimate created by counsel was only the cost for the final teardown of the facility; (6) the dismantlement cost calculations that resulted from the Louisiana Commission's calculations were so significantly lower than all other estimates on the record that it was apparent that those calculations were not comparable; and (7) because the cost calculations presented by the Louisiana Commission were not presented

[322] *Id*. at 46.

[323] *Id*. at 50.

[324] *Id*. at 44.

until the hearing, Entergy had no opportunity to submit any testimony or evidence countering those calculations.[325]

4. Commission Determination

157. We affirm the Presiding Judge's finding that Entergy's estimate for Entergy Arkansas' dismantlement costs was sufficiently supported and properly included in the Depreciation Rates. We find Entergy's reliance on the various dismantlement cost studies relied upon in the Spanos and Freier Studies to be just and reasonable and find that the dismantlement costs are supported. Entergy's use of the negative net salvage estimates contained in the depreciation rate studies conducted in the Freier Study are properly supported, as discussed further below.

158. We find unavailing Staff's arguments that the AGA/EEI Study does not provide a basis to include the dismantlement costs. Entergy produced a variety of data, cost estimates, and studies including over 1,800 pages of depreciation data for the depreciation study. Entergy also provided additional comparison studies and reports comparing Entergy Arkansas' estimated dismantlement costs to other similarly-situated companies. These studies and evidence collectively demonstrate that the proposed dismantlement costs are "systematic" and "rational," and consistent with costs typically seen in the electric industry. For example, in Exhibit No. LC-74,[326] Entergy produces a dismantlement cost report showing the estimated dismantlement costs, estimated retirement years, total decommissioning costs in current and future years and a net salvage percentage. While these costs are derived from a methodology used in the AGA/EEI Study, the costs used in Entergy Arkansas' implementation of this methodology are based upon Entergy Arkansas' estimated costs for future dismantlement and a three percent escalation factor. Consistent with this, Entergy has provided two additional independently conducted studies for comparison, the Entergy Gulf States Study and the Gulf Power Study.[327]

159. Given the evidence before us, we affirm the Presiding Judge's decision to allow Entergy's use of the negative net salvage estimates contained in the depreciation rate studies conducted in the Spanos and Freier Studies. We find that Entergy's dismantlement costs are supported. Entergy's proposed dismantlement costs have been accepted by both the Arkansas Commission and the Louisiana Commission in retail rate

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[325] *Id*.

[326] Ex. LC-74.

[327] Ex. EAI-17; Ex. EAI-18.

proceedings.[328] Further, the Louisiana Commission has accepted similar dismantlement cost estimates for comparable facilities in the Entergy Gulf States Study.

160. Staff argues that Entergy's reliance upon Entergy witness Caldwell's selective comparisons and studies is misplaced. Staff argues that Entergy witness Caldwell's reliance on Spanos' use of the AGA/EEI Study and the comparison to dismantlement costs in the Entergy Gulf States Study and the Gulf Power Study is misplaced, as well. We disagree. The studies picked by Entergy witness Caldwell were selected because of the importance of comparing similarly-situated companies and facilities whose dismantlement costs should be comparable. Neither Staff nor the Louisiana Commission demonstrated that the selected studies were inappropriate or misleading in their estimates. We agree with the Presiding Judge that the decommissioning cost estimate is appropriate because it is similar to those contained in the Entergy Gulf States Study and dismantlement costs proposed by Entergy Arkansas. Accordingly, we agree with the Presiding Judge's reliance on the studies for use in determining dismantlement costs.[329]

161. We also affirm the Presiding Judge's determination that a site-specific study is not required in order to justify depreciation rates. Staff witness Pewterbaugh acknowledged that the Commission has never required site-specific studies in an electric case, and Staff has failed to justify the need in this case. Because there is no evidence of a Commission practice for such a requirement, we find no error in the Presiding Judge's decision not to require a site-specific study to support the decommissioning costs in this case. We find Staff's arguments that Entergy's dismantlement costs are unsupported to be unconvincing, and affirm the Presiding Judge.

E. Three Percent Inflation Factor of Dismantlement Costs

1. Initial Decision

162. The Presiding Judge determined that Entergy met its burden to show that its decommissioning allowance for steam production units,[330] should be calculated with dismantlement costs escalated three percent annually to the retirement dates estimated for Entergy's production units.[331] The Presiding Judge agreed with Entergy witness

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[328] Initial Decision, 136 FERC ¶ 63,015 at PP 157-63.

[329] *Id*. P 161 (citing Ex. EAI-9 at 45).

[330] *See supra* note 22; Ex. EAI-8 at 1-3.

[331] Initial Decision, 136 FERC ¶ 63,015 at P 172.

Caldwell's testimony that escalating costs to the date of retirement is "virtually universal to the electric industry," and further stated that that, "the concept is clear that current costs must be inflated to reflect future costs in order to avoid intergenerational inequity."[332] The Presiding Judge referenced the finding in *Boston Edison*[333] that it is just and reasonable to use an inflation factor in determining the decommissioning cost, and it would create intergenerational inequity if an inflation factor were not used in determining that cost.[334] Although the Presiding Judge acknowledged that *Boston Edison* concerned a different type of facility compared to the one in the present case, he found that the principle concerning intergenerational inequity remained the same.[335] He rejected as speculative and unworkable the Louisiana Commission's argument that cost increases from inflation can be offset by productivity gains or improvement in removal techniques.[336]

163. The Presiding Judge pointed out that Staff witness Pewterbaugh's objection to the inclusion of any inflation, not a specific objection to the amount of three percent.[337] Staff witness Pewterbaugh opposed the three percent inflation factor as speculative and proposed that Entergy periodically update its dismantlement costs with the Commission to reflect inflation and other changing factors. However, the Presiding Judge noted witness Pewterbaugh's concession that his recommendation is not supported by Commission precedent, the instruction of the USoA or Staff's position in past proceedings.[338] The Presiding Judge found the arguments against an inflation factor to be unsupported and noted that no testimony was presented that addressed whether three percent is an appropriate number if escalation is permitted.[339]

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[332] *Id*. P 167.

[333] *Id.* P 85 (citing *Boston Edison Co.*, Opinion No. 350, 52 FERC ¶ 61,010 (1990) (*Boston Edison*)).

[334] *Id.* P 168.

[335] *Id*.

[336] *Id*. P 167.

[337] *Id*. P 169.

[338] *Id*.

[339] *Id*.

164. In addition, the Presiding Judge noted that generational inequity would result if at the time of dismantlement Entergy would not have collected the required funds, but instead, would have to charge the customers at the time of dismantlement for all of the costs.[340]

2. Briefs on Exceptions

165. Staff states that the Presiding Judge incorrectly reasoned that current costs must be inflated to reflect future costs in order to avoid intergenerational inequity and that the Presiding Judge also misapplied the *Boston Edison*[341] decision to the calculation of dismantlement costs of the steam generators.

166. Staff states that the *Boston Edison* decision specifically applied to a nuclear unit and a particular contract, not to a steam generator. Staff contends that the record shows that substantial differences exist between the decommissioning cost treatments of nuclear and steam production facilities that render *Boston Edison* inapplicable to the present case.[342] The Louisiana Commission's Brief on Exceptions also states that *Boston Edison* is not applicable to the present case because it involved a legal retirement obligation and a trust fund. The Louisiana Commission explains that when a decommissioning allowance is established for a nuclear unit, the regulator factors in *both* escalation and fund earnings, and the two tend to offset each other.[343] However, according to the Louisiana Commission, there is no offsetting here, and therefore, no basis for the escalation allowance.[344]

167. Staff maintains that the record supports a finding that Entergy's adjustment to include inflation is speculative and should be removed from the calculation of Entergy Arkansas' proposed depreciation rates in order to avoid charging ratepayers for costs that

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[340] *Id*. P 156.

[341] Staff Brief on Exceptions at 20 (citing *Boston Edison*, 52 FERC ¶ 61,010).

[342] *Id*. at 21. Staff states that decommissioning accrual for steam generators is a deduction from rate base, while the decommissioning accrual for nuclear generators is placed in a trust fund. Further, decommissioning of steam generators has no requirement to add an escalation, or inflation, factor to the costs, while decommissioning of nuclear generators has such a requirement from the NRC.

[343] Louisiana Commission Brief on Exceptions at 61.

[344] *Id*.

may not occur.[345] Moreover, Staff argues that the Presiding Judge erred by ignoring Staff witness Pewterbaugh's concern with the inclusion of inflation in the estimate of dismantlement costs, i.e., the need to protect the ratepayers from costs that may not occur. Staff explains that the inclusion of inflation in the estimate for decommissioning costs essentially shifts the burden of paying future escalated costs to the present ratepayers by requiring these ratepayers to pay the average annual amount of all future inflation, an amount defined by estimates.

168. According to Staff, the Presiding Judge erred in shifting the burden of proof to Staff to specifically challenge the reasonableness of Entergy's proposed three percent inflation factor. Staff argues that Entergy has the burden of proof to show that it is just and reasonable to allow an inflation factor, and if allowed, that it should be three percent. Staff states that the record shows that Entergy witness Caldwell was unaware of how the inflation factor was calculated and thus Entergy did not meet its burden of proof. Finally, the Commission handles "current costs, not speculative future costs," therefore, Staff argues that the Presiding Judge erred in accepting such a factually unsupported, speculative inflation rate proposed by Entergy.[346]

169. The Louisiana Commission argues that the three percent inflation factor was not supported by Entergy and that "it would be highly arbitrary to establish an escalation rate on this basis."[347] Consequently, the Louisiana Commission opposes the inclusion of any escalation of the dismantlement costs.

3. Briefs Opposing Exceptions

170. Entergy disagrees with Staff's criticism of the Presiding Judge's finding that current costs must be inflated to reflect future costs in order to avoid intergenerational inequity. Entergy points out that Staff fails to cite to a single case, regulation, USoA provision, or depreciation text to support its position and Staff witness Pewterbaugh failed to cite to any Commission precedent or regulation supporting his position. Entergy argues that with the lack of any legal support for its position, Staff does not present any real reasons for the Commission to find that this position represents good policy and instead spends a considerable portion of its brief attempting to argue that certain depreciation texts cited by Entergy witness Caldwell[348] and mentioned in the Initial

[345] Staff Brief on Exceptions at 16.

[346] *Id*. at 23-24.

[347] Louisiana Commission Brief on Exceptions at 60.

[348] Entergy Brief Opposing Exceptions at 54-56 (citing Ex. EAI-9 at 47).

Decision[349] do not support the escalation of dismantlement costs. Entergy again argues that Staff fails to explain how the numerous references in those texts to the need to reflect "future costs" could refer to anything other than a need to escalate current costs. Entergy notes that Staff does not assert that any of the cited depreciation manuals supports its position nor does it cite to any other depreciation treatise or manual suggesting that escalation of dismantlement costs to the time of retirement is inappropriate.

171. Entergy also responds to the Louisiana Commission's arguments that the Presiding Judge incorrectly relied on *Boston Edison*. According to Entergy, in *Boston Edison*, the Commission rejected a proposal to eliminate escalation of nuclear decommissioning costs to the expected date of retirement and accepted Boston Edison's commitment to submit periodic updates on an agreed timeframe over the life of the facility. Entergy argues that the Commission's holding has equal force here. According to Entergy, Staff argues that the *Boston Edison* decision should not control because that decision applied to a nuclear decommissioning fund rather than to a calculation of dismantlement costs for steam generators. Entergy argues, however, that Staff failed to explain why the central point of the *Boston Edison* holding - that it is unfair to current ratepayers to ignore future inflation of decommissioning costs – is not equally applicable to the treatment of dismantlement costs for steam generation units, as the Initial Decision found.

172. Entergy also argues that, according to Staff, even assuming *arguendo* that intergenerational inequity will occur unless inflation is included, this inequity will still occur unless the inflation occurs exactly as predicted. Entergy states that the problem with this argument is that Staff's proposal to eliminate the inflation factor guarantees that there will be intergenerational inequity and the elimination of the inflation factor is essentially the same thing as adopting an estimate of zero inflation in the future. Entergy argues that it is better to use a good faith estimate of inflation in order to share the payment of the total dismantlement costs among generations of customers than to use a zero inflation factor, an estimate that is almost certain to be wrong. By contrast, use of a zero inflation factor is too low and automatically shifts the burden away from current customers and on to future customers. Entergy states that this is an improper result, as the Commission held in *Boston Edison*.

173. Entergy argues that the Presiding Judge correctly held that Entergy satisfied its burden of proof with respect to the three percent inflation factor and during the hearing proceedings because no party opposed the three percent inflation factor proposed at the hearing. The dismantlement cost estimates included in the depreciation study were based on 2008 dollars, then were escalated three percent a year to the projected retirement date

[349] *Id.* at 50 (citing Initial Decision, 136 FERC ¶ 63,015 at P 167).

(the remaining service life) of each generation plant to derive the cost of dismantlement at the time the unit is retired. Although both the Louisiana Commission and Staff submitted testimony opposing the application of the three percent inflation factor to Entergy Arkansas' depreciation rates, Entergy points out that no party contested as a factual matter the reasonableness of this three percent inflation factor. Entergy argues that Louisiana Commission witness King's proposed method used the same estimated three percent annual escalation of dismantlement costs over the life of the generation unit, but shifts the recovery of a significant portion of those costs to the latter years of the unit's life. Entergy argues that Staff witness Pewterbaugh did not support King's approach, but instead opposed the inclusion of any escalation whatsoever.

174. Entergy argues that it met its initial burden of going forward when it filed its direct case, and it was then incumbent upon the Louisiana Commission to submit some kind of evidence attacking Entergy's showing, which would have then given Entergy the opportunity to respond. Entergy argues that because the Louisiana Commission did not even attempt to contest the three percent inflation factor and, in fact, supported the use of that factor at the hearing, it clearly did not meet that burden. Entergy claims that after supporting the three percent inflation factor at the hearing, it is too late for the Louisiana Commission to now assert that this same three percent factor was unsupported. Furthermore, Entergy disagrees with Staff's argument that the Presiding Judge placed the burden on Staff to show a problem with the three percent inflation factor. Entergy argues that Staff did not raise the validity of the three percent factor as a separate issue and failed to submit any evidence attacking the reasonableness of the three percent inflation factor. Entergy argues that because Staff failed to raise these issues during hearing and bring supporting documents showing that the resulting rates were unjust and unreasonable, Staff cannot now complain that Entergy failed to provide any evidence in support of that factor.

4. Commission Determination

175. We affirm the Presiding Judge's finding that Entergy has demonstrated that the decommissioning cost estimate should be escalated three percent annually to the retirement dates estimated for Entergy Arkansas' steam production units. Based on the record before us, we agree with the Presiding Judge that it is reasonable for the current decommissioning costs to be inflated to reflect future costs of decommissioning at the time of retirement in order to avoid intergenerational inequities between current and future ratepayers.

176. We affirm the Presiding Judge in rejecting the Louisiana Commission and witness King's proposal requiring Entergy to use SFAS No. 143 amounts in the developing depreciation rates for the steam production plant. We agree with Staff witness Pewterbaugh's analysis that the SFAS No. 143 methodology that Louisiana Commission witness King advocated is also inapplicable here. As explained by Pewterbaugh, Entergy

Arkansas' steam generators are not classified has having Asset Retirement Obligations, and therefore SFAS No. 143 is not applicable to the Entergy Arkansas units.[350]

177. We find that although Staff witness Pewterbaugh challenged the inclusion of the three percent inflation factor, he did not propose an alternative inflation factor (other than suggesting that periodic updates should be made to account for inflation). Nevertheless, Staff witness Pewterbaugh admitted that it is reasonable to expect inflation to rise in the future. We conclude that Staff witness Pewterbaugh's position here was not based on Commission precedent or USoA instructions, and is therefore unsupported. As discussed above, we reject both the Louisiana Commission witness King's rationale that inflation should be included as it occurs and his alternative SFAS No. 143 approach. For these reasons, we affirm the Presiding Judge's decision permitting the addition of a three percent inflation factor.

F. Depreciation Precedent and Accounting and Ratemaking Treatment under Service Schedule MSS-3

178. On January 11, 2010, the Commission issued Opinion No. 505, which addressed the first annual bandwidth filing.[351] In Opinion No. 505, the Commission held that Entergy is required to use the data that exists on the Operating Companies' books and is included on the FERC Form No. 1 for each Operating Company.[352] Additionally, the Commission held that, while it has the authority to change the depreciation expenses included in the bandwidth formula, it would not do so in an annual bandwidth implementation proceeding, i.e., a proceeding established to determine the production costs of the Operating Companies.[353] Rather, any changes to the bandwidth formula would require a future FPA section 205[354] or 206[355] filing.[356] The Commission further

[350] Initial Decision, 136 FERC ¶ 63,015 at P 67.

[351] *Entergy Servs., Inc.*, Opinion No. 505, 130 FERC ¶ 61,023 (2010), *order on reh'g*, *Entergy Servs., Inc.*, Opinion No. 505-A, 139 FERC ¶ 61,103 (2012).

[352] Opinion No. 505, 130 FERC ¶ 61,023 at PP 171-172.

[353] *Id.* PP 172-73. The Commission stated that the annual bandwidth filing is "not about what production costs would have been if different depreciation rates had been in effect in 2006, but simply about applying the formula using actual 2006 data." *Id.* P 173.

[354] 16 U.S.C. § 824d.

[355] *Id*. § 824e.

noted that if Entergy desires to change the depreciation rates reflected on its books and to include such depreciation rate changes in its bandwidth calculation, it must make a section 205 filing.[357]

179. The Commission addressed the depreciation issue again on March 10, 2010, in an order denying interlocutory appeal in the third bandwidth proceeding.[358] In that order, the Commission noted that the annual bandwidth proceeding's purpose is to assess whether Entergy properly implemented the bandwidth formula, not whether the formula itself is just and reasonable.[359] The Commission reiterated that any modifications to the currently-effective Service Schedule MSS-3 bandwidth formula must be made via a separate filing under section 205 or section 206 of the FPA.[360] Referencing Order No. 618,[361] the Commission again stated that depreciation rates included in a formula rate do not adjust automatically just because the depreciation rates underlying the FERC Form No. 1 numbers change; rather, a separate section 205 filing is required to change such rates.[362]

180. Subsequent to these orders, on October 7, 2011 (which was after the issuance of the Initial Decision in the instant proceeding but before the filing of briefs on and opposing exceptions), the Commission issued Opinion No. 514, which addressed

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[356] Opinion No. 505, 130 FERC ¶ 61,023 at PP 172-173.

[357] *Id.* n.205.

[358] *Entergy Servs., Inc.*, 130 FERC ¶ 61,170 (2010) (Order Denying Interlocutory Appeal).

[359] *Id.* P 20.

[360] Notably, the Commission acknowledged that statements in prior orders could be interpreted as suggesting that "parties had the opportunity in Entergy's annual bandwidth filings to challenge the reasonableness of any cost inputs in the Service Schedule MSS-3 bandwidth formula, including the depreciation rates effective for Entergy's annual bandwidth filings, but that was prior to the Commission's experience with the first annual filing, and may have been 'unintentionally misleading.'" *Id.*; *see also Arkansas Pub. Serv. Comm'n v. Entergy Corp.*, 137 FERC ¶ 61,030, at P 21 (2011) (October 7 Rehearing Order).

[361] Order No. 618, FERC Stats. & Regs. ¶ 31,104 at n.25.

[362] Order Denying Interlocutory Appeal, 130 FERC ¶ 61,170 at n.32.

Entergy's second bandwidth filing.[363] In Opinion No. 514, the Commission rejected requests to examine the justness and reasonableness of depreciation inputs within the bandwidth proceedings themselves. The Commission addressed arguments on whether the definitions of the depreciation variables allowed the Commission to substitute its own depreciation expenses for those approved by retail regulators. The Commission found that the references to the Commission's jurisdiction in the definitions of the depreciation variables refer to depreciation expenses charged to traditional wholesale customers that were approved by the Commission, rather than being a reference to the Commission substituting its own depreciation expenses in the bandwidth proceedings for those otherwise determined by retail regulators that have been adopted for use in the bandwidth formula in Service Schedule MSS-3.[364] Thus, the definitions of the depreciation variables were interpreted so that, for purposes of the bandwidth formula, depreciation rates approved by retail regulators are required to be reflected in calculations implementing the bandwidth formula.

1. Initial Decision

181. The Initial Decision did not make specific findings regarding depreciation precedent and ratemaking treatment for Service Schedules MSS-1, MSS-4 and MSS-3. While the parties filed briefs on and opposing exceptions on these issues, they were not discussed as part of the Initial Decision.

2. Briefs on Exceptions

a. Applicability of Service Schedule MSS-3 Depreciation Precedent

182. Staff maintains that this section 205 proceeding that is seeking to change depreciation rates is a case that was envisioned in Opinion No. 505, and that Opinion No. 514 does not alter the rulings in Opinion No. 505.[365] If the Commission determines that Opinion No. 505 or Opinion No. 514 does not apply, Staff urges the Commission to use this proceeding as the vehicle to reconcile the depreciation rules set forth in Opinion Nos. 505 and 514.

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[363] Opinion No. 514, 137 FERC ¶ 61,029.

[364] *Id*. PP 48-49.

[365] Staff Brief on Exceptions at 9.

183. The Louisiana Commission alleges that Entergy changed the Entergy Arkansas depreciation expense that will be used in the MSS-3 bandwidth tariff prior to September 27, 2010, the effective date set by the Commission in the Hearing Order. The Louisiana Commission states that Entergy's approach also suggests that, if the Commission determines Entergy Arkansas' production depreciation rates should be different from those approved by the Arkansas Commission, Entergy will change the rates and expense for accounting and the Service Schedule MSS-1 and MSS-3 tariff rates only to the extent Entergy Arkansas' production plant is allocated exclusively to wholesale service.[366] The Louisiana Commission argues that by striking, on procedural grounds, portions of its witness Kollen's cross-answering testimony and the entirety of its witness King's cross-answering testimony, the Presiding Judge failed to address Entergy's proposal to reflect Commission-prescribed depreciation rates that differ from retail depreciation rates to compute only the depreciation expense related to the portion of plant assigned to "wholesale" in Entergy's most recent retail rate case.[367] Further, the Presiding Judge ruled that the May 17 Order removed all blended depreciation rate-related matters from this proceeding.[368]

184. The Louisiana Commission argues that the Commission must decide whether Commission-prescribed depreciation rates may be diluted by mixing them with retail-prescribed depreciation rates.[369] According to the Louisiana Commission, Entergy allegedly recorded incorrect depreciation expense on its accounting books in 2010 and 2011 and Entergy proposes a methodology to weight the depreciation expense between the Commission depreciation rates and retail depreciation rates.[370] The Louisiana Commission argues that this method of blending rates will result in incorrect depreciation expense on Entergy's accounting books in the future.[371] The Louisiana Commission states that Entergy's depreciation expense and the aforementioned weighting proposal violate the requirements of Opinion No. 618, which exercises the Commission's jurisdiction over depreciation expense for accounting and ratemaking purposes and, according to the Louisiana Commission, requires Entergy or another party to make a

[366] Louisiana Commission Brief on Exceptions at 61.

[367] *Id*. at 61-62.

[368] *Id.* at 62. *See also* Initial Decision, 136 FERC ¶ 63,015 at P 7.

[369] Louisiana Commission Brief on Exceptions at 62.

[370] *Id.*

[371] *Id.*

section 205 or 206 filing to change depreciation rates or expense.[372] The Louisiana Commission states that Entergy's proposals reflect the theory that the depreciation expense for accounting purposes should reflect some "blend" for retail and wholesale depreciation rates rather than the Commission-approved depreciation rates.[373] This accounting treatment, it states, would effectively deny the Commission's jurisdiction over the depreciation rates and expense for accounting and ratemaking purposes in contravention of Opinion No. 618.[374] It explains that Entergy would only use a small percentage of Commission-approved depreciation rates in its wholesale tariffs, and the majority of those rates would be based on differing state-approved retail rates**.**

b. Accounting and Ratemaking Treatment under Service Schedule MSS-3

185. The Arkansas Commission states that there are two formulas under Service Schedule MSS-3, and only one of those formulas, which relates to the calculation of the annual payments and receipts under the bandwidth remedy, is at issue in this proceeding.[375] The Arkansas Commission argues that the bandwidth remedy as established in the Commission's Opinion Nos. 480 and 480-A requires an annual calculation and filing to maintain a bandwidth of +/- 11 percent of the average production costs. Because Service Schedule MSS-3 is a filed rate, the Arkansas Commission contends that the formula must be followed unless modified under FPA section 205 or 206.[376]

186. According to the Arkansas Commission, the Presiding Judge erred by failing to address or adhere to the requirement of the Commission-filed MSS-3 bandwidth formula which mandates the use of actual data on the Operating Companies books.[377] The Arkansas Commission states that the Entergy Arkansas depreciation expense is associated predominantly with retail service and the small portion that is not associated

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[372] *Id.* at 62-63.

[373] *Id*. at 64.

[374] *Id.*

[375] Arkansas Commission Brief on Exceptions at 10.

[376] *Id*. at 10-11.

[377] *Id.* at 9.

with retail service is primarily associated with Service Schedule MSS-4. The Arkansas Commission states that:

> [e]ven if the Commission upholds the Initial Decision's determination on the [Arkansas Nuclear One] steam generator replacement costs, the Commission should make clear that such modified depreciation rates must follow the MSS-3 filed rate so that any revised depreciation expense applies only to the wholesale sales component of recorded depreciation expense and the [Arkansas Commission-approved] depreciation rates will continue to apply to the retail component.[378]

3. Brief Opposing Exceptions

a. Applicability of Service Schedule MSS-3 Depreciation Precedent

187. The Arkansas Commission argues that in Opinion No. 514 the Commission confirmed that unless the bandwidth formula is changed pursuant to a filing under FPA section 205 or 206 the calculation must use actual depreciation expense as recorded and reported by the Operating Companies. The Arkansas Commission further argues that even where the Commission might require a different depreciation rate than the depreciation rate established by retail regulators, that rate shall only apply to the wholesale component of the recorded depreciation expense. The Arkansas Commission states that the Louisiana Commission takes issue with the "blended rate" followed by Entergy in the bandwidth formula and requests the Commission should make clear that the Commission can adjust depreciation rates for accounting and ratemaking purposes.

188. The Arkansas Commission also takes exception to Staff's argument that an inconsistency exists between Opinion No. 514 and Opinion No. 505. It contends that under FPA section 205, the Commission should use the depreciation rates for use in Service Schedules MSS-1, MSS-3 and MSS-4 as a vehicle to reconcile the depreciation rules set forth in Opinion No. 514 and 505. While the Arkansas Commission agrees with Staff's suggestion that the Commission must follow its own precedents or alternatively provide a reasoned explanation for a material departure, it argues that Staff should support the blended rate approach as directed in Opinion No. 514.

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[378] *Id*. at 12.

189. The Louisiana Commission argues that Entergy cannot pick and choose how to "blend" its rates as the Commission has jurisdiction over all of Entergy's generation plant through the System Agreement. It states that, under section 301 of the FPA, the Commission has exclusive jurisdiction over accounting for all of Entergy's plant regardless of the wholesale ratemaking jurisdiction. Therefore, the Louisiana Commission argues that if a plant is included in a retail rate base, the Commission has dual jurisdiction with the Arkansas Commission for ratemaking. The Arkansas Commission disagrees with the Louisiana Commission's argument that the Commission should reject the Arkansas Commission's request to require the use of retail-prescribed depreciation rates for accounting and ratemaking as it would undermine Order No. 618 and the Commission's depreciation precedents.

b. Accounting and Ratemaking Treatment under Service Schedule MSS-3

190. The Arkansas Commission argues that the Commission previously reversed the initial decision in the second bandwidth filing on this issue by finding that "…because the Commission has approved the formula ([Service Schedule] MSS-3) it is the filed rate and under the filed rate doctrine may not be changed absent a section 205 or 206 proceeding."[379] The Arkansas Commission argues that the Commission further stated that "… replacing actual state approved depreciation expense inputs required for use by the bandwidth formula with reconstructed inputs would explicitly alter the depreciation component of the bandwidth."[380]

191. The Arkansas Commission reiterates that if the Commission adopts a different depreciation rate than the rate adopted at retail, as submitted by Entergy and approved by the Arkansas Commission under their retail rate authority, the Commission should clarify that any such modified rate applies only to the wholesale component of Entergy Arkansas' recorded depreciation expense, not the retail component.[381] The Louisiana Commission argues in opposition of this request claiming that the Commission has dual jurisdiction over the retail ratemaking authority in this case.

192. The Louisiana Commission argues that the Commission has jurisdiction over both wholesale and retail rates with respect to Service Schedule MSS-3. It argues that this

[379] *Id.* at 18 (citing *Entergy Servs., Inc.*, Opinion No. 514, 137 FERC ¶ 61,029, at P 49 (2011)).

[380] *Id.*

[381] *Id.* at 19-20.

proceeding, a section 205 filing, is the proper venue for addressing changes to depreciation rates in the bandwidth. The Louisiana Commission says that for the Commission to deny the challenge in this case when the Commission has previously stressed that section 205 filings are the venue for challenges would be irrational and reverse Commission precedent.[382]

193. According to the Louisiana Commission, the Arkansas Commission contends that the Commission should find that the MSS-3 formula prohibits the use of just and reasonable depreciation rates even if the Commission prescribes depreciation rates that are different from retail rates.[383] It argues that the depreciation rates that were the subject of Opinion No. 514 were not fixed by the Commission and largely were set before the issuance of Order No. 618. The Louisiana Commission states that the Arkansas Commission's arguments would require the Commission to reverse prior decisions, i.e., Opinion No. 505 and the Order Denying Interlocutory Appeal, that required Entergy to make a section 205 filing in order to change its depreciation rates.[384] The Louisiana Commission states that there is a big difference between using rates never passed on by the Commission and using a rate different from one that the Commission expressly deemed just and reasonable.[385]

194. The Louisiana Commission argues that holding that utilities need not follow Commission depreciation prescriptions for accounting would reverse Commission precedent and undermine the policy established in Order No. 618. The Louisiana Commission states that the Commission needs to make clear that it, not retail regulators, determines the depreciation rates to be used for accounting and Commission ratemaking purposes.[386] The Louisiana Commission argues that under FPA section 301, the Commission has exclusive jurisdiction over accounting for all of Entergy's plant, regardless of the extent of the Commission's wholesale ratemaking jurisdiction.[387] The Louisiana Commission argues that when plant also is included in a retail rate base, the regulators exercise dual jurisdiction for ratemaking. According to the Louisiana

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[382] Louisiana Commission Brief Opposing Exceptions at 12.

[383] *Id.* at 11.

[384] *Id.* at 12.

[385] *Id*. at 11-12.

[386] *Id*. at 14.

[387] *Id*.

Commission, the presence of parallel retail jurisdiction does not displace the Commission's authority, as claimed by Entergy and the Arkansas Commission. The Louisiana Commission further argues that Entergy "picks and chooses" how to "blend" its rates and that such blending cannot be defended on jurisdictional grounds. It explains that the "blending" ratio of the wholesale and retail rates used by Entergy in this proceeding does not match the generation subject to allocation.[388]

4. Commission Determination

195. As discussed below, subsequent to the hearing, Initial Decision, and briefs on and opposing exceptions in this proceeding, the Commission has made a number of clarifications with regard to the bandwidth formula depreciation variables in Service Schedule MSS-3.[389] In particular, the Commission has clarified that for purposes of the bandwidth remedy in Service Schedule MSS-3, the definitions of the bandwidth formula depreciation variables require the depreciation rates approved by retail regulators to be reflected in the calculation implementing the bandwidth formula. In Opinion No. 519, which was issued 8 months after the filing of briefs opposing exceptions in the instant proceeding,[390] the Commission affirmed that it has the authority to adopt retail-determined depreciation rates in the jurisdictional bandwidth formula. In distinguishing the Commission's findings in Opinion No. 514 from those in Opinion No. 505, the Commission explained that in Opinion No. 505:

> [t]he Commission stated that any changes to the bandwidth formula would require a future FPA section 205 or 206 filing. As the Commission has subsequently clarified, if parties believe that Entergy inputted data from the wrong parts of FERC Form [No.] 1 in its bandwidth formula, or that the data used was incorrectly calculated, such objections are properly

[388] *Id*. at 14-15.

[389] Because none of these clarifications were available during the course of the instant proceeding, the findings we make above with respect the issues raised on exception are based on the record that was before the Presiding Judge.

[390] Opinion No. 519, 139 FERC ¶ 61,107 at P 13. In Opinion No. 519, issued May 7, 2012, the Commission found that the Louisiana Commission had not met its burden of proof under section 206 of the FPA to show that section 30.12 of Service Schedule MSS-3 of the System Agreement, which provides for the use of wholesale and retail depreciation expenses, is unjust and unreasonable or unduly discriminatory or preferential.

> raised in an annual bandwidth proceedings. Conversely, if parties believe that the methodology in Service Schedule MSS-3 with respect to depreciation expenses should be changed, they should file a separate section 206 complaint (or, in the case of Entergy, a section 205 filing).[391]

196. Specifically, the Commission affirmed Opinion No. 514's clarification that the definitions of the bandwidth formula depreciation variables require depreciation rates approved by retail regulators to be reflected in calculations implementing the bandwidth formula.[392] The Commission found that in light of that interpretation of the depreciation variables, it was unnecessary for Entergy to make a section 205 filing in order to seek approval to include revised depreciation rates adopted by any of its retail regulators in the bandwidth formula.[393] The Commission also clarified that the Commission's policy on changes in depreciation in formula rates established in Order No. 618 does not apply to the bandwidth formula.[394] The Commission further explained that it was reversing statements to the contrary in Opinion No. 505 and the Order Denying Interlocutory Appeal.[395]

197. We note that Opinion No. 519 addressed the blended rate argument that the Louisiana Commission raised in that proceeding and again here. The blended rate approach refers to a blended state-federal rate, i.e., the bandwidth formula's (section 30.12 of Service Schedule MSS-3) use of state-established depreciation rates for retail transactions and Commission-established depreciation rates for wholesale transactions. In Opinion No. 519, the Commission stated that:

> We reject the notion that the Commission has delegated its authority over wholesale rates to retail regulators. The fact that the Commission has accepted a formula that utilizes inputs that may have been determined at the state level does not constitute a delegation of our jurisdiction over depreciation expenses. The Commission previously approved Entergy's compliance filings

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[391] *Id*. P 110 (internal citations omitted).

[392] *Id.* P 26 (citing Opinion No. 514, 137 FERC ¶ 61,029 at P 26).

[393] *Id.* P 112.

[394] *Id.*

[395] *Id.*

> implementing the bandwidth formula, which include the use of depreciation expenses as approved by the relevant state commissions, as just and reasonable.[396]

We reiterate here that the "blended rate" argument that the Louisiana Commission restates here was given due consideration in Opinion No. 519 and rejected. The Commission in Opinion No. 519 stated that:

> [T]o the extent the bandwidth depreciation variables require the use of depreciation rates approved by retail regulators, those depreciation rates *are* the Commission-approved depreciation rate for bandwidth formula purposes, and the resulting amount of depreciation expense is appropriately recorded by the Entergy Operating Companies in the FERC depreciation accounts in their FERC Form 1s, consistent with *Ohio Edison*. [397]

198. As contemplated in Opinion No. 519, and in light of the interpretation of the depreciation variables in Opinion No. 514, Entergy need not submit to the Commission section 205 filings seeking approval for revised deprecation rates adopted by any of Entergy's retail regulators in the bandwidth formula for Service Schedule MSS-3.[398] The findings we make in this order with respect to the issues raised on exception pertain to filed depreciation rates as they apply for use in Service Schedules MSS-1 and MSS-4.

G. Motion to Take Judicial Notice of NRC Issuances

1. Entergy Motion to Take Judicial Notice

199. On March 30, 2012, Entergy filed a motion requesting that the Commission take judicial notice of two Preliminary Notifications issued by the NRC and an NRC safety evaluation explaining the relevance of the Preliminary Notifications to this proceeding. Entergy notes that the Preliminary Notifications were issued on March 16, 2012 and February 1, 2012, respectively, therefore it could not have cited the Preliminary

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[396] *Id.* P 111 (internal citations omitted).

[397] *Id*. P 113.

[398] In light of the Commission's findings subsequent to the hearing, Initial Decision, and briefs on and opposing exceptions, the effective date established in the Hearing Order for Service Schedule MSS-3 does not apply because section 205 filings seeking approval for revised deprecation rates adopted by any of Entergy's retail regulators in the bandwidth formula need not be submitted to the Commission.

Notifications at the hearing in this proceeding, in its brief on exception, or in its brief opposing exception.

200. Entergy states that the Preliminary Notifications document problems recently experienced with replacement steam generators at the San Onofre Nuclear Generating Station Unit No. 3 (San Onofre Unit), which also uses Alloy 690 tubing. Specifically, on January 31, 2012, the San Onofre Unit was shut down due to a tube leak in one of its new steam generators, which has been operating for approximately one year in the first operating cycle following replacement of the steam generators. Entergy states that inspections following the shut down confirmed a small leak in a steam generator tube, but further inspection identified "unexpected wear, including tube to tube as well as tube to tube support structural wear."[399] Although the Preliminary Notifications do not specify the type of alloy used in the tubes at the San Onofre Unit, Entergy proffers that the unit's safety evaluation shows that the replacement steam generators for replacement steam generator tubes were constructed of Alloy 690, the same alloy used in ANO-1 and ANO-2 replacement steam generators.[400]

201. Entergy argues that the Preliminary Notifications represent a recent experience with Alloy 690 tubes in steam generators used at nuclear facilities and demonstrate that such tubes are potentially subject to unexpected wear. According to Entergy, this is evidence of Alloy 690 tube problems in the industry. Entergy argues this supports Entergy witness Mitchell's testimony that Alloy 690 tubes may not last through the remaining service lives of ANO-1 and ANO-2 and that it is not possible to conclude at this time that the replacement steam generators at ANO-1 and ANO-2 are unlikely to be replaced. Entergy argues that this supports its position that the retired steam generators should be included in the interim retirement histories for both ANO-1 and ANO-2. Therefore, Entergy asks that the Commission consider the Preliminary Notifications in ruling on the exceptions filed in this proceeding regarding the interim retirement histories that should be used for ANO-1 and ANO-2.

2. Louisiana Commission Opposition to Motion

202. The Louisiana Commission argues that the motion by Entergy should be denied as it fails to meet the requirements for official or judicial notice of adjudicative facts as set forth in Rule 508 of the Commission's Rules of Practice and Procedure. The Louisiana

[399] Entergy Motion for Judicial Notice at 4 (citing March 16, 2012 Preliminary Notice at 1). Entergy adds that the March 16, 2012 Preliminary Notifications also reports that several of the ANO Unit's tubes failed pressure tests. *Id*.

[400] *Id*.

Commission argues that the rule allows official notice of matters that may be judicially noticed by the courts of the United States and upon matters about which the Commission is expert. It contends that Entergy's motion falls short of meeting either standard.

203. The Louisiana Commission states that Entergy is seeking to supplement the record, post-hearing.[401] The Louisiana Commission argues that the documents Entergy seeks to introduce are merely preliminary reports and do not provide a basis for determining even whether they could be relevant to the issues in this case. Moreover, the Louisiana Commission argues that a fact may be judicially noticed under this Commission's rules only if it relates to a subject about which the Commission is expert, or it is a fact that is not subject to reasonable dispute because it is generally known within the court's territorial jurisdiction or it can be "accurately and readily determined from sources whose accuracy cannot reasonably be questioned."[402] The Louisiana Commission argues that Commission precedent does not allow documents related to disputed litigated issues to be officially noticed.[403]

204. The Louisiana Commission also argues that, under the Federal Rules of Evidence, judicial notice is not allowed unless the issue is beyond reasonable dispute. Only if a matter is clearly beyond reasonable controversy "is it fair to dispense with the traditional methods of proof-rebuttal evidence, cross-examination, usually confrontation, and argument, either written or oral or both."[404] Accordingly, the Louisiana Commission states that judicial notice of Entergy's two Preliminary Notification documents and its June 25, 2009 letter with attachments is inappropriate, as the issues raised in these documents are not within this Commission's expertise. Further, the Louisiana Commission states that these issues are not generally known nor capable of accurate and ready determination through sources that cannot reasonably be questioned, nor do these documents meet the requirements of Commission Rule 508 or Federal Rule of Evidence 201. The Louisiana Commission also argues that to be judicially noticed, a fact must be "beyond reasonable controversy." Likewise, the Louisiana Commission argues that, under the Federal Rules of Evidence, judicial notice is not allowed unless the issue is

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[401] Louisiana Commission Opposition to Motion at 5.

[402] *Id.* at 6 (citing Federal Rules of Evidence Rule 201(b)(2).

[403] *Id.* at 6-7 (citing *AES Ocean Express LLC v. Florida Gas Transmission Co.*, 119 FERC ¶ 61,075 (2007); *Williams Natural Gas Co.*, 77 FERC ¶ 61,277 (1996)).

[404] *Id*. at 7-8 (citing Federal Rules of Evidence Rule 201, Advisory Committee Note).

beyond reasonable dispute,[405] and that facts are reasonably disputable even if they appear in governmental reports or government documents as well.[406]

205. The Louisiana Commission also disputes the accuracy and validity of the Preliminary Notification documents. The Louisiana Commission points out that the reports of "unexpected wear" and the failure of three tubes during an pressure test are unverified and were received without verification or evaluation.[407] It states that the June 5, 2009 letter, is offered to show a plan of the owning utility to use the Alloy 690 tubing during the replacement of the steam generators. The Louisiana Commission also asserts that the other changes in the San Onofre Unit Nos. 2 and 3 technical specifications are not within the Commission's expertise. Although the Commission may set depreciation rates that include nuclear steam generators, the Louisiana Commission states that the Commission is not an expert on nuclear plant design, Alloy 600 or Alloy 690 and not an expert on the similarities or differences between the San Onofre and Arkansas Nuclear One units.

206. The Louisiana Commission also disputes the issue whether use of Alloy 690 tubing in the ANO-1 and ANO-2 Units will make the additional replacement of the steam generators at the units unlikely during their current license lives. The Louisiana Commission also states that evidence exists that the tubing problems of the San Onofre Units are related to design issues unique to San Onofre Unit Nos. 2 and 3 and are not due to the fact that the tubing is manufactured from Alloy 690.[408] According to the Louisiana Commission, the hearing evidence established that the steam generators are unlikely to be replaced a second time during the current license lives of ANO-1 and ANO-2.[409] According to the Louisiana Commission, the documents for which Entergy seeks judicial notice only indicate on a preliminary basis some limited tubing problems with Alloy 690 and do not show that the steam generators are of similar design to ANO-1 and ANO-2.

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[405] *Id*. at 8 (citing *Buczek v. Continental Cas. Ins. Co.*, 378 F.3d 284, 291 n.4 (3rd Cir. 2004) (finding judicial notice of weather data compiled by National Climate Data Center was inappropriate where the weather data at issue was in dispute)).

[406] *Id.* (citing *Melong v. Micronesia Claims Comm'n*, 643 F.2d 10, 12 n.5 (D.C. Cir. 1980); *Carly v. Wheeled Coach*, 991 F.2d 1117, 1126 (3rd Cir. 1993)).

[407] *Id.* at 8-9.

[408] *Id*. at 10.

[409] *Id.* at 8-9.

Nor can any conclusions for this case be drawn from the preliminary reports.[410] Furthermore, according to the Louisiana Commission, other evidence exists that the tubing problems of the San Onofre Units are related to design issues unique to the San Onofre Unit Nos. 2 and 3, and are not due to the fact that the tubing is manufactured from Alloy 690.[411] The Louisiana Commission points out that a March 27, 2012 press release stating that Southern California Edison identified that wear and tear resulted from tubes vibrating and rubbing against adjacent tubes and against support structures inside the steam generators that are unique to the San Onofre Units.[412]

207. Finally, the Louisiana Commission argues that the record in this docket is closed, and to take judicial notice the record will need to be reopened. Reopening the record is disfavored, and the Commission in exercising its discretion should look to the existence of extraordinary circumstances that outweigh the need for finality in the administrative process.[413] The Louisiana Commission states that Entergy has not met this burden and there are no extraordinary circumstances here. The tubing issue was explored at the hearing in this proceeding, and Entergy's documents do not change that analysis.[414]

3. Commission Determination

208. Rule 508(d) specifies that "a presiding officer may take official notice of any matter that may be judicially noticed by the courts of the United States, or of any matter about which the Commission, by reason of its functions, is expert."[415] Further, "any participant requesting official notice of facts after the conclusion of the hearing must set forth reasons to justify the failure to request official notice prior to the close of the hearing."[416]

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[410] *Id.* at 9.

[411] *Id*. at 10.

[412] *Id.* at 9-10.

[413] *Id*. at 11 (citing *East Texas Elec. Coop, Inc. v. Cent. and Sw. Servs., Inc.* 94 FERC ¶ 61,218 (2001)).

[414] *Id*.

[415] 18 C.F.R. § 398.508(d).

[416] 18 C.F.R. § 398.508(d)(3).

209. The Commission has determined that it may take official notice of the actions of sister agencies.[417] The NRC is a sister agency of the Commission, and therefore, we may officially notice both Preliminary Notifications. Further, Entergy explained its failure to request official notice prior to the close of the hearing and issuance of the Initial Decision due to the fact that the Preliminary Notifications were issued on March 16, 2012 and February 1, 2012, respectively. However, Rule 508(d)(2) requires that the Presiding Officer provide the requesting participants with an opportunity to refute an officially noticed fact. The Louisiana Commission has requested the time to refute the official notice requested by Entergy. At this late stage of the proceeding, we do not believe intervenors will have a meaningful opportunity to oppose Entergy's motion and conduct a complete examination of this issue. Providing the time required by Rule 508(d)(2) will needlessly delay this proceeding and therefore, we will deny Entergy's motion for official notice. Also, we agree with the Louisiana Commission that the question of whether the use of Alloy 690 tubing in ANO-1 and ANO-2 will likely require additional replacement during their license lives is a disputed fact that does not inform the record here and may indicate issues unique to the San Onofre units.[418] Accordingly, we deny Entergy's motion to take Judicial Notice of NRC issuances in this proceeding.

The Commission orders:

(A) The Initial Decision is hereby affirmed, as discussed in the body of this order.

(B) Entergy's Motion to Take Judicial Notice is hereby denied, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

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[417] *See SFPP, L.P.*, 134 FERC ¶ 63,013, at P 327 (2011) (citing *Sys. Energy Res., Inc.* 96 FERC ¶ 61,165, at 61,737 (2001)).

[418] *Williams Natural Gas Co.*, 77 FERC ¶ 61,277. *See also Portland Natural Gas Transmission Sys.*, Opinion No. 510, 134 FERC ¶ 61,129, at P 271 (2011) (denying a request for official notice where the possible effect occurred approximately 21 months after the close of the test period and did not inform the record).